Modern packaging

Nominated for *Packaging's Hall of Fame*. Story on Page 96

January 1953

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Vinyl Acetate

COPOLYMERS

in solution

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for—

- **Laminations**
- **Heat-Seal Coatings**
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Modern packaging

Vol. 26 No. 5 January 1953

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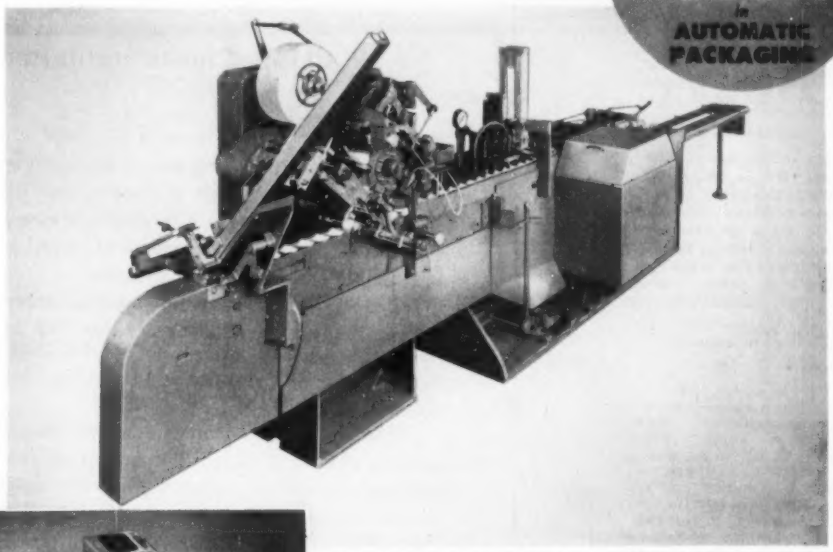
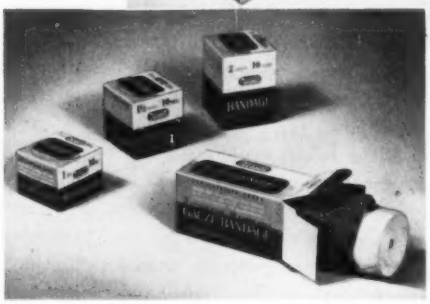
MAKES A COMPLEX WRAPPING-CARTONING JOB *EASY*..

another REDINGTON MACHINE

HIGH SPOT

in AUTOMATIC PACKAGING





AN ADJUSTABLE REDINGTON TYPE 24A6 HANDLES THE WHOLE BANDAGE PACKAGING ASSIGNMENT

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Here's the typical REDINGTON operation — automatic and continuous — at high speed, low labor cost, and with precision:

Bandage rolls, cut to length, are carried end to end in a chute, from which the REDINGTON feeds them one by one, breaking them off if they adhere. At the same time, the machine cuts a wrapper of the proper length from a roll. It wraps the bandage, giving a druggist fold to the long seam, closing the ends with a square fold, and spot-gluing at each end.

As the machine's conveyor brings each wrapped bandage to the carton magazine, the REDINGTON feeds and forms a carton, inserts the wrapped bandage, and completes the operation by gluing the outer end-flaps. In the finished packages the unusual wrap and the tight seal provide thorough protection against the entrance of impurities, and the maintenance of the sterility of the bandages.

Type 24A6 is quickly adjustable for any of three or four sizes. And like all REDINGTONS, every detail of this machine is engineered and built to the highest standards. Such standard REDINGTON features as *Ground and Polished Shafting . . One-Piece Cast Iron Frame . . Shafting turning in Self-Aligning Roller Bearings . . Smooth Gear Train Drive* . . and others assure long trouble-free life.

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Modern packaging

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Opportunity unlimited

FOR THE FIRST TIME in 11 years, the users of packaging find themselves, at this year-end, with no present or impending shortage of any basic packaging material. Considering that we have absorbed a $60-billion defense program while maintaining the civilian economy at record levels, that is a remarkable and unexpected situation.

But here we are. Reserve supplies of certain materials such as tin and polyethylene are thin. But for the moment the packager can choose any material he desires and expect delivery within a reasonable time; there is enough to go around.

That is why, in this January issue, we have abandoned our postwar custom of a year-end survey of the supply situation and substituted a review of certain developments and trends which seem to us to point the way that packaging is going. For, in the present free materials market, the bright new ideas in packaging are no longer to be filed away for future reference; they are open, not to the fortunate few, but to everybody—right now.

And along with the fullest exploration of new materials and new forms of packages, we recommend to the 1953 packager a thoroughgoing check-up on production machinery.

Contrary to expectations a year ago, the packaging-machinery manufacturers generally are in an excellent position right now to provide overhaul parts and mechanisms, to replace outmoded equipment with new and improved models, or—for the first time in years—to take on the development of specialized machinery to meet special packaging problems.

The policy of "make do" with machinery has been with us, perforce, for so long that it is in danger of becoming a permanent attitude. But the older and wiser heads know that, in the long run of a normal, competitive economy, the manufacturer who keeps his machinery just a little better than his competitors' is better equipped both mechanically and competitively.

The Editors

Keeps light out Keeps moisture out Keeps air out

Everybody talks about the weather . . . but Dobeckmun *does* something about it. For four trying years, The Wm. S. Merrell Company fought the sticky problem of packaging Cepacol, its moisture-sensitive medicated throat lozenge. Nothing seemed to work. Finally they found the answer in Dobeckmun's "flexible tin can", weather-proof Metalam®. Result: A superbly printed package . . . no more melted lozenges . . . lots more sales. Write for our informative free booklet, "Metalam", and you'll do something about the weather, too.

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belong on your production line.

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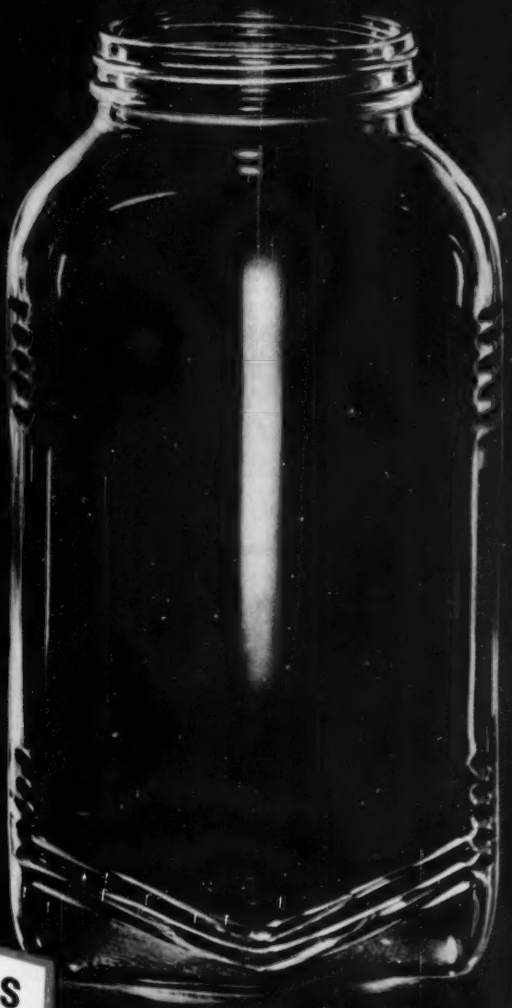

HAZEL-ATLAS GLASS CO.
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News about

B. F. Goodrich Chemical *raw materials*

Better *fronts* for paper with Geon coatings!

HERE you see a few of the many possible coating uses for Geon materials. And you'll find in the broad range of Geon latices and solution resins materials ideally suited for specific applications.

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Write for helpful advice on your coating or packaging problems. Our technical service will help you determine the Geon materials best suited to your needs. Please address Dept. GL-1, B. F. Goodrich Chemical Company, Rose Building, Cleveland 15, Ohio. In Canada: Kitchener, Ontario. Cable address: Goodchemco.

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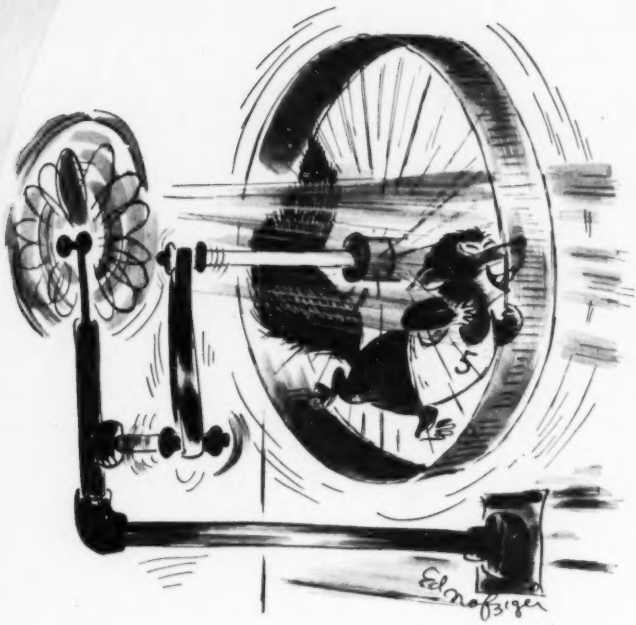

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- WRITE FOR SAMPLE BOOK

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We welcome your inquiries as to the suitability of Koppers Polystyrene for your product package. Technical data on its properties are available upon request. As always, we want to work with you to obtain the best results from your use of Polystyrene . . . to create novel designs, eye-catching beauty and maximum sales appeal in your packages at an economical cost.

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(Domestic and Foreign Patents Pending on Machines, Parts and Packages)

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See "Packaging Pay-off"... Reynolds new 16mm. color movie now available for *your* private showing!

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By keeping bakery products fresher—longer! By increasing sales appeal—improving eye-appeal—allowing all the appetizing goodness of the product to shine through—instantly! By sealing out dust and dirt and retaining a smooth, neat appearance throughout shelf life.

To make your package look smart—stay smart—get quicker buying action . . . use *Sylvania* Cellophane—preferred wrapping for faster selling.

Your Sylvania representative will be glad to suggest ways for increasing the effectiveness of your present packaging. Or, write our Market Development Department.

SYLVANIA DIVISION AMERICAN VISCOSE CORPORATION

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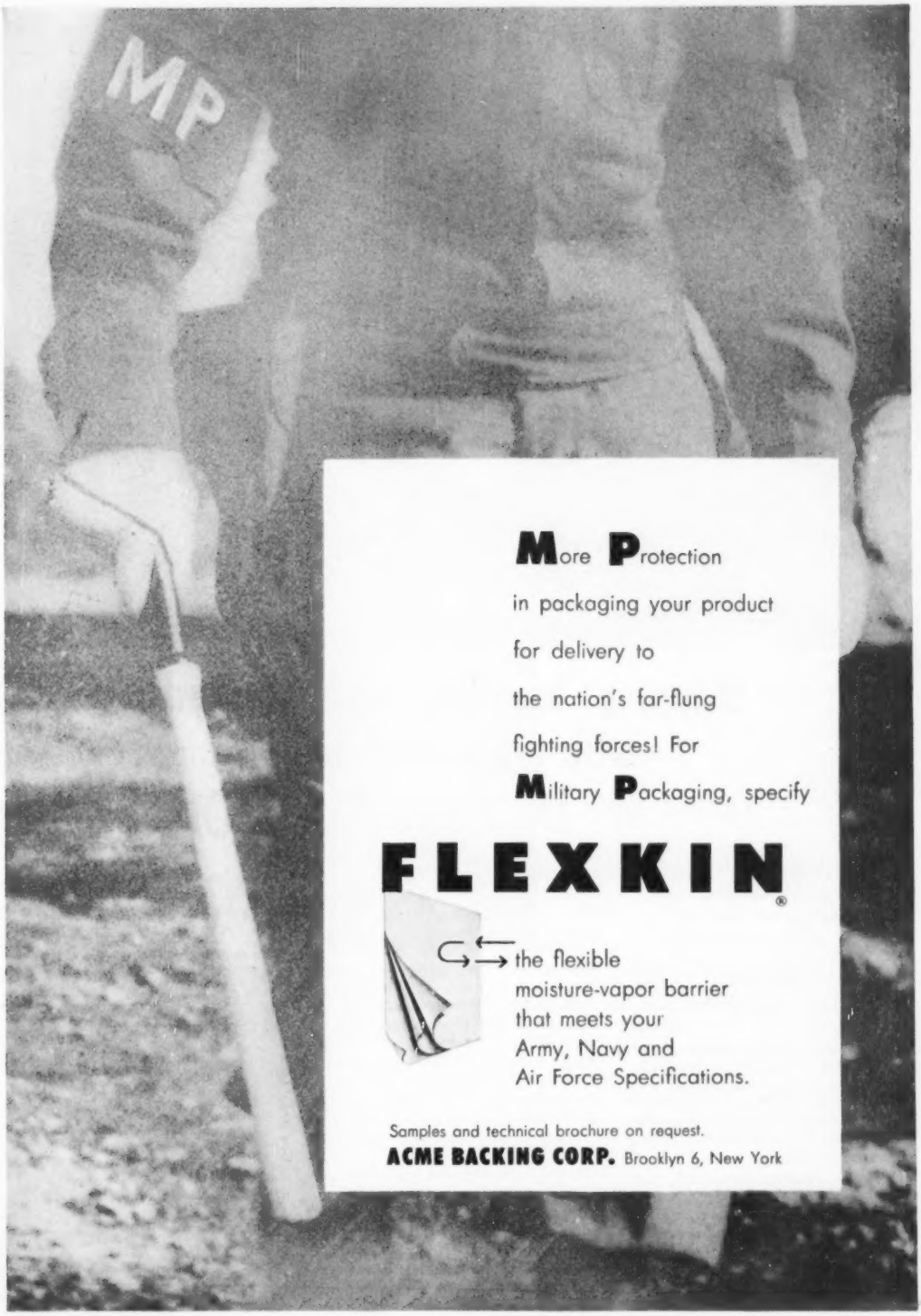

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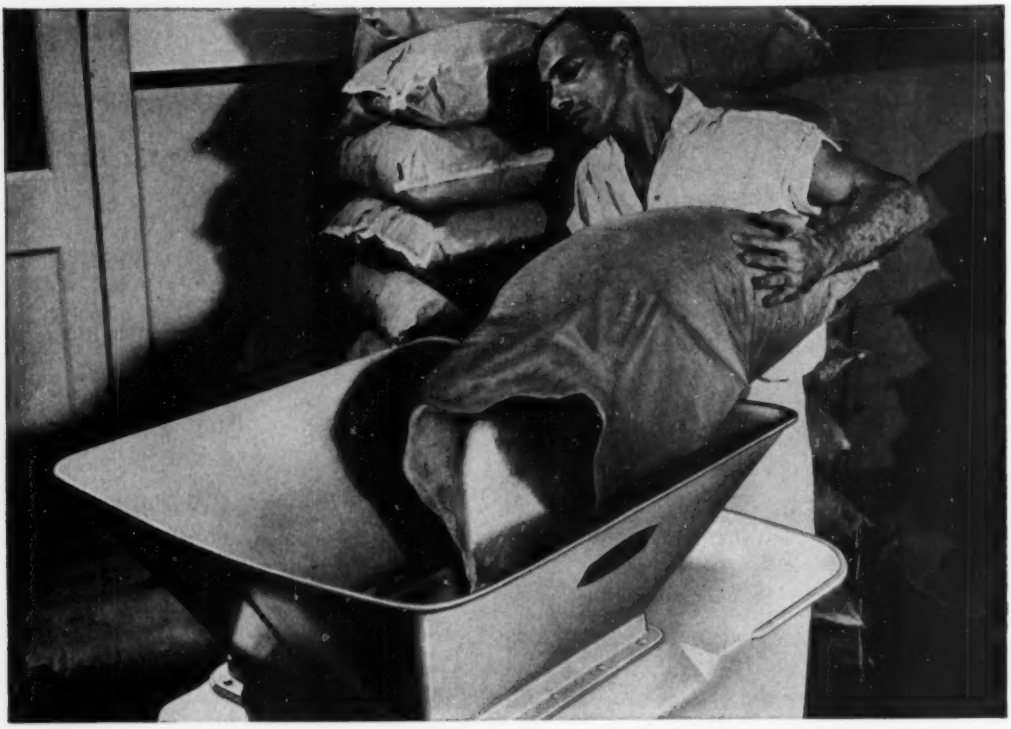

Shipping, handling costs slashed with multi-wall bags coated with Du Pont ALATHON

REG. U. S. PAT. OFF.

Dairy companies deliver better dried milk, gain 5 new sales features with bags inner-coated with "Alathon"

Here is a typical example of how coatings of Du Pont "Alathon" polyethylene resin help provide better packaging for many dairy products.

Multi-wall bags—using paper coated with "Alathon" as a moisture barrier—are more economical than the containers formerly used. What's more, they're far easier to handle, ship and store—and return shipping costs are *eliminated*.

As for product protection, tests show these bags provide excellent moisture resistance. The coating of "Alathon" even keeps moisture out more effectively than *two* sheets of conventional barrier material for multi-wall bags . . . and makes the bag stronger, too!

And here are 5 ways bakers benefit (5 sales advantages for the dairy) from the use of bags made moisture-resistant by "Alathon": (1) Less caking, flavor well preserved because moisture is kept out. (2) Full protection against contamination. (3) Easier, safer handling—lighter packages. (4) Better stacking—less storage space required. (5) Simple disposal.

For other new ways to meet dairy packaging needs, consider coatings of "Alathon" on fiber drums and cartons, chipboard containers and trays. You can count on "Alathon" because it's tough, strong and scuff-resistant—chemically inert—tasteless, odorless, non-toxic—resists greases, oils, acids, alkalis—stays flexible at temperatures down to 70°F. below zero! **Write for free booklet** describing the properties and uses of "Alathon" in the packaging field. We'll gladly put you in touch with sources of supply for packaging materials coated with "Alathon."

E. I. du Pont de Nemours & Co. (Inc.)
Polychemicals Dept. 151-M, Du Pont Bldg.
Wilmington 93, Delaware

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. . . through Chemistry

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DEPARTMENT
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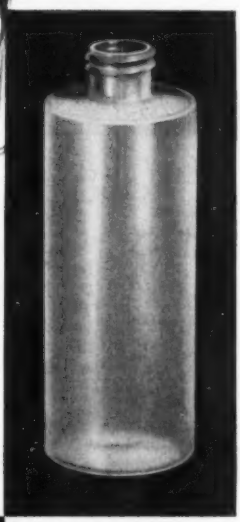
switch to the packaging that has changed the nation's buying habits!

MILLS PLASTIC*

BOTTLES



Manufactured under patents 2,515,093—2,579,390—2,579,399. Other patents pending.

You can quickly see why MILLSPLASTIC bottles have hit the buying public with such habit-changing power.

Three words—lightweight, unbreakable, versatile—tell the story. They mean greater safety and usefulness for the consumer, reduced shipping, breakage and spoilage costs for the cosmetic, drug and chemical manufacturer. Industrial users find that aside from these general advantages MILLSPLASTIC bottles have properties which make them the best possible containers for acids and a variety of chemicals.

The superior design and quality of MILLSPLASTIC bottles is evident in our two standard styles, Mills "Cylinder" available in 2-4-6-8 oz. and quart and gallon sizes; Mills "Oblong" in 2-4 oz. size. Both styles come in natural Polyethylene or your favorite color.

We also custom design MILLSPLASTIC bottles in sizes, shapes and colors to meet your special needs. Atomizers, tubing and closures are available in standard styles or can be custom made.

Great as the impact of MILLSPLASTIC bottles has been, we don't believe that the surface of their usefulness and versatility has been scratched.

Your product may have a use that can blaze new trails of profit when packaged in MILLSPLASTIC bottles. Why not talk it over with us or our sales agents today. *T. M. Reg.

ELMER E. MILLS CORPORATION

2930 NORTH ASHLAND AVENUE • CHICAGO 13, ILLINOIS

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DETROIT: 139 W. Maple, Birmingham, Mich. • **ST. PAUL:** 2109 Village Lane

How Waxed Paper helps sell your brand at low cost

Successful food merchandising . . . is brand merchandising

1 STRONG BRAND IDENTIFICATION

In today's self-service stores, *your brand name* is your most valuable sales asset. Your packaging must tie in with your *brand* advertising and promotion . . . should make *your brand* stand out on the shelf. Economical waxed paper packaging gives you these important brand merchandising advantages at low cost.

2 MAXIMUM DISPLAY VALUE

A basic family design on low-cost waxed paper packages ties your entire line together. Increases sales of all your products; brings you more sales for the money you spend to advertise your fastest moving items; and insures quicker consumer recognition of your brand name.

3 UNIFORM PRODUCT APPEARANCE

You build consumer confidence . . . and repeat sales . . . when your product is packaged to look fresh, flavorful, and appetizing. Colorful waxed paper packaging combines strong brand identification with appetizing product illustration to provide uniform packaging with proven sales appeal . . . at substantial packaging savings.

WAXED PAPER INSTITUTE, INC., 38 S. DEARBORN ST., CHICAGO 3, ILL.

SELL MORE . . . MORE PROFITABLY . . . WITH MODERN **WAXED PAPER**

waxed paper protects freshness

WILLIAM W. FITZHUGH, INC.
CORRUGATED CONTAINER DIVISION

Our new plant now in operation
at Lakeview, Nassau County,
Long Island, New York

We can't make ALL the corrugated
SO
We Make the Best of It

WILLIAM W. FITZHUGH INC.

FOLDING · SET-UP · CORRUGATED BOXES · LABELS · SPECIALTIES
GENERAL SALES OFFICE
200 FIFTH AVENUE, NEW YORK 10, N.Y.
TELEPHONE ALGONQUIN 5-9500

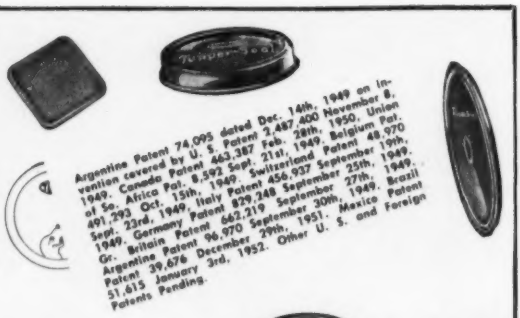
Tupper Seal, air and liquid tight flexible covers fit, and are included in the sets of all Tupperware Canisters.

The Tupperware 50 oz. Canister is "standard equipped" with the Tupper Seal, air and liquid-tight flexible Pour All cover.

The Tupper Seal, air and liquid-tight flexible Pour All cover is used on every Tupperware 20 oz. Canister.

The Tupper Seal, air and liquid-tight, Pour All cover as a cover for 46 oz. cans; Tupperware Sauce Dishes and other containers of metal, glass or pottery. Foods easily dispensed without removing entire cover.

The Tupperware Wonder Bowls are usually fitted with Tupper Seal, air and liquid-tight covers.



Argentine Patent 74,095 dated Dec. 14th, 1949 on invention covered by U. S. Patent 2,487,400 November 8, 1949. Canada Pat. 463,387 Feb. 28th, 1950. Union of So. Africa Pat. 8,592 Sept. 21st, 1949. Belgium Pat. 491,293 Oct. 15th, 1949. Italy Patent 459,248 September 19th, 1949. Germany Patent 829,248 September 25th, 1949. Switzerland Patent 286,937 September 16th, 1949. Gr. Britain Patent 662,219 September 27th, 1949. Brazil Argentina Patent 96,970 September 30th, 1949. Mexico Patent 39,676 December 29th, 1951. Other U. S. and Foreign 51,615 January 3rd, 1952. Patents Pending.

TUPPER / Seals

air and liquid-tight, flexible covers for Tupperware Tumblers, Canisters, Wonder Bowls, Cereal Bowls and many another container of glass, metal and pottery, the contents of which it is desired to keep fresh and wholesome.

TUPPER!

FORMAL NOTICE! 9th November, 1949

EXCLUSIVE!

U. S. Patent #2,487,400

The Tupper Corporation has attained a position of leadership in this industry by incurring great expense and expending painstaking effort in the development, design, manufacture and exploitation of its many world-known products.

The Tupper Corporation further has anticipated the inevitable attacks to which leadership is subject and has taken measures provided by law to preserve the creative rights to its products, methods and design by patent protection both in the United States and abroad.

Tupper Seals for Tupperware shown in this advertisement are just a few of the forms covered in this manner and are specifically covered by U.S. Patent #2,487,400.

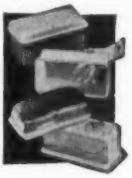
Only the Tupper Corporation, by U.S.Patent #2,487,400 has the right to make, use and vend container closures in connection with any and all types of containers throughout the United States and its territories as covered by the claims of the Patent.

Tupper Corporation will protect, according to law, the exclusive rights above granted

TUPPER CORPORATION

There's a Tupper Seal, air and liquid-tight flexible cover for Tupperware 2, 5, 8 and 12½ oz. Tumblers too, and these Tupper Seal, covers fit many other containers of metal, glass and crockery.

The Tupper Seal, air and liquid-tight flexible Por Top cover, specially designed as a dispensing cover for specified diameters of containers holding foods such as syrups, salad dressings, catsup.



The cover of the Tupperware Bread Server which serves as a bread tray also is designed to give similar results as Tupper Seal, air and liquid-tight Flexible covers. Keeps contents fresh as no other such container.

When equipped with Tupper Seal, air and liquid-tight, flexible covers, Tupperware Cereal Bowls serve many another purpose.

The Tupper Seal, air and liquid-tight flexible cover made for Tupperware 8 oz. Tumblers also fits and is sold with all Tupperware Funnels as a base when funnels are used as storage containers.

TUPPER

Manufacturers of — CONSUMER, INDUSTRIAL, PACKAGING AND SCIENTIFIC PRODUCTS

Factories, Laboratories and Sales Offices: Farnumsville, Mass., Orlando, Fla., L'Epiphanie, P. Q.

Showrooms: 225 Fifth Ave., N.Y.C.

ADDRESS ALL COMMUNICATIONS TO: Department MP-1

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DURABLE *Beauty*

FOR YOUR

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ASSORTMENTS

DISTINCTIVE - PRACTICAL
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STOCK DESIGNS
AND SIZES
ALSO AVAILABLE

Quality **OLIVE CAN COMPANY** *Service*
MANUFACTURERS • DESIGNERS
PLAIN • LITHOGRAPHED
METAL CONTAINERS
450 N. LEAVITT ST., CHICAGO 12, ILLINOIS

How to "soup up" sales

THANKS to packages designed by Milprint and Shellmar and made with Kaiser Aluminum Foil, dehydrated soups made by various manufacturers have all these sales advantages:

Point-of-Sale Appeal—Sparkling surface of aluminum foil makes package a standout on the shelf—yet minimum shelf space is required. Small, lightweight package takes less room in shopping bag, is easy to carry. Encourages quantity buying.

Flavor Protection—Non-porous aluminum foil keeps flavor in, moisture out indefinitely. Absolute product purity is insured, even in long storage. And aluminum imparts no flavor.

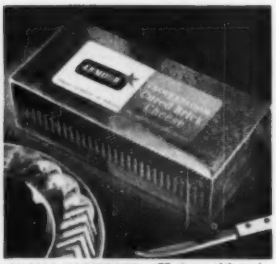
Production Ease—Aluminum foil is easy to print on. Flat surface of package can be fully utilized for product name display and label information. Durable heat seal is easily and speedily applied.

Give the benefits of Kaiser Aluminum Foil to *your* customers—whether the product is foods, medicines, pharmaceuticals, fluids, electronics, machinery. Supplies are increasing daily. For Kaiser Aluminum is completing facilities to increase its production of primary aluminum 137%.

Call any office for complete information and current availability. Kaiser Aluminum offices and warehouse distributors in principal cities. Kaiser Aluminum & Chemical Sales, Inc., Oakland 12, California.

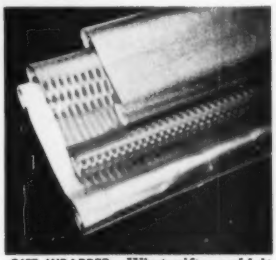
Kaiser Aluminum

Setting the pace—through growth, quality and service



CHEESE PRESERVER—Kaiser Aluminum Foil wrapper on Armour Creameries' Cloverbloom Cured Brick Cheese protects quality, prevents drying out, minimizes costly weight loss.

RATION KEEPER—Many hygroscopic military rations such as dehydrated coffee and milk rely on Kaiser Aluminum Foil as a moisture and vapor barrier.



GIFT WRAPPER—What gift *wouldn't* look more desirable wrapped in handsome Kaiser Aluminum Foil? Plain, embossed and printed patterns give variety.

PIE SELLER—Pie plates made from Kaiser Aluminum Foil conduct heat evenly, quickly in baking. Adds eye-appeal on the shelf, steps up sales. No washing, no refunds, no transfer to paper plates necessary.

this is the "standard" for freedom

On Bedloe's Island in New York Harbor, The Statue Of Liberty stands as a symbol of America's freedom . . . welcoming refugees and homeward bound voyagers to the land where freedom of speech, religion, and all other American privileges, are theirs to enjoy without censure.

COLO AFT

Standard

printing company

Subsidiary of Shellmar Products Corporation

COLUMBUS, GEORGIA

this is the "standard" for package printing

A striking blue cellophane liner printed in red and white depicts scenes from outdoor sports. A plain cellophane "drop in" with gold printing identifies each piece of candy in this selection.

Both are Standard-printed to give Hollingsworth's My Hobby Box the unusual packaging touch it deserves. It is another example of Standard's printing ability which captures the mood of your product for greater sales.

Accuracy Assured

Leading biscuit, cracker, cookie and pretzel manufacturers insist on dependable, high-speed weighing accuracy. They achieve it with Wright's **Hy-Tra-Lec** automatic weighers. Pictured here are just a few of the products now handled by this modern method of weighing. **Hy-Tra-Lec** machines utilize the principle of "positive displacement" and represent one of the century's most significant advances in weighing engineering. A variety of models are available to meet specific requirements. Inquiries invited. Latest literature supplied upon request.

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Exuviate...

"To shed an old covering"—

Remember Webster's definition and let your product EXUVIATE . . . let us design and produce interesting and different boxes with product appeal styled by . . .

THE WARNER BROTHERS COMPANY

BRIDGEPORT 1, CONNECTICUT

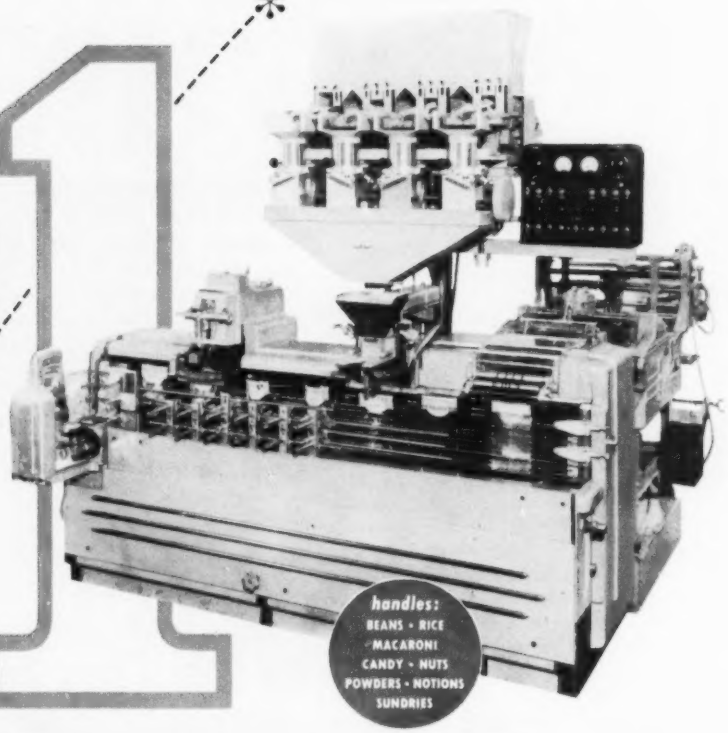
New York Sales Office: 200 Madison Avenue, New York 16, N. Y.

Boston Sales Office: Little Building — Room 553, Boston 16, Mass.

FOLDING CARTONS—HAND MADE OR MACHINE MADE SETUP BOXES

TRANSPARENT ACETATE BOXES — COUNTER DISPLAY BOXES

PACKAGE *Your* products—in 1 operation



* CONTINUOUS FULLY-AUTOMATIC

Simplex-O-Matic

BAGMAKER • WEIGHER • MEASURER • FILLER • SEALER • CHECKER

Up to 35 bags of packaged products per minute—in one continuous automatic operation with the Simplex-O-Matic packaging machine—saves time, product and cost. It is easily adjusted for accurate fill and readily converted to handle various types of products in single or duplex bags up to 4″ x 8″ x 12″. Interchangeable plates in controlled heat sealer allow choice of flat or gussetted bags. Filling operation is protected by a "no bag-no fill" safety device. One operator handles the fully-automatic Simplex-O-Matic, and packs finished bags in cartons. From printed roll stock to packaged product, the Simplex-O-Matic makes packaging far simpler, less costly.

For full information write for new Simplex-O-Matic bulletin.

Check with Simplex

for your bag-packaging needs

- ***Polyethlene:*** Simplex makes better polyethlene bags... *including 1 mil*...stacks, counts, sorts *automatically*. 12″ and 24″ bag-width models.
- ***Cellophane:*** 8 versatile Simplex models for cellophane, glassine and Pliofilm bags...flat or gusset ...up to 20″ long.
- ***Scrim and Barrier:*** High-speed Simplex makes barrier, scrim-back foil, laminated kraft bags...up to 30″ long...for weather-proof and military use.

Simplex

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SUBSIDIARY OF FOOD MACHINERY AND CHEMICAL CORPORATION

AN ACM CARTON

-a top product -and sales !

Every once in a while, somebody comes along and says—"It's all been done!"

Then an enterprising organization, such as STROHMEYER & ARPE COMPANY, of New York, shows up on the scene, puts a new idea, "RE UMBERTO PARTI-PAL," to an old product to work, displays it in a new, modern and eye-catching ACM carton, markets it with a three-in-one cocktail hour appeal—martinis, manhattans and gibsons—and what do you have? SALES—SALES—SALES!

ACM cartons catch the eye, tell the story and help sell the product!—Our no-cost-to-you consultation on your packaging problems is available, if you will just write, wire or call.

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Subsidiary of Robert Gair Company, Inc.
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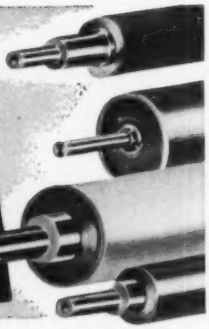
For All Packaging and Production Needs

Specify PAMARCO ground finished ROLLS



-precision made by experts to the most exacting specifications

EVENFLO ANILINE INKING ROLLS

Engraved surface meters ink automatically, makes time-consuming adjustments unnecessary. Save time, ink and rejects. Also recommended for applying all types of coatings by rotogravure.

no-flex ANILINE PLATE ROLLS

Can't flex or whip, assure perfect impressions on every run. Tubular construction reduces weight, tests stronger than solid steel. Ground finish to exact specifications.

PAMARCO ROTO-GRAVURE ROLLS

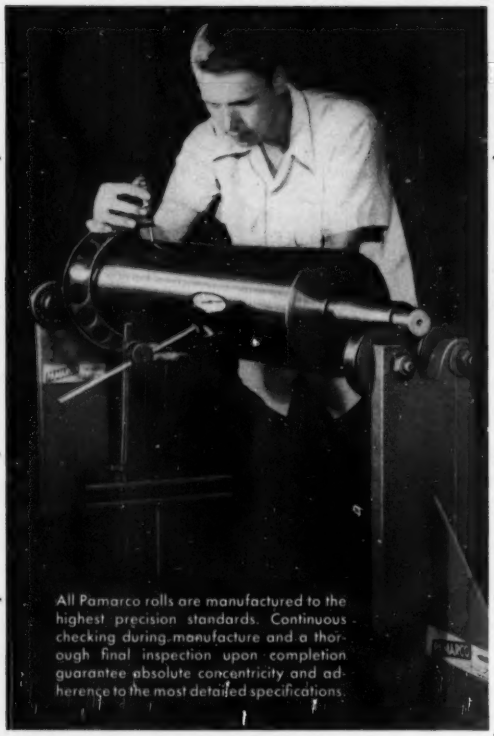
Accurate core or base cylinders for rotogravure process reproduction. Recommended for long service in continuous printing production. Each roll carefully inspected prior to shipment.

PAMARCO RUBBER COVERED ROLLS

Cores by Pamarco for rubber covered rolls are supplied for every industrial application. All cores are machined from the finest grade shafting and ground finished by expert mechanics.

PAMARCO PLAIN STEEL ROLLS

Precision ground plain steel rolls by Pamarco can be supplied for every industrial purpose. All sizes and shapes are made by Pamarco to exact specifications including finishing to desired tolerance.



All Pamarco rolls are manufactured to the highest precision standards. Continuous checking during manufacture and a thorough final inspection upon completion guarantee absolute concentricity and adherence to the most detailed specifications.

PAMARCO ROLLS ARE AVAILABLE FOR EVERY PRODUCTION AND PROCESSING PURPOSE INCLUDING

LIGHT DUTY ROLLS — ENGRAVED ROLLS
TUBULAR ROLLS — HEAVY DUTY ROLLS
CHILL ROLLS — WARM SURFACE ROLLS
IDLER ROLLS — CHROME PLATED ROLLS
RUBBER COVERED ROLLS

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Depend on the ROLLS PRESS BUILDERS USE!

Most modern presses are equipped at the factory with EVENFLO and No-Flex Rolls. Look for this sign of extra dependability on your new aniline presses. Your press builder will gladly supply data on Evenflo Rolls. Ask for the facts, today!

1014 OAK ST., ROSELLE, N.J.

Big Advance in Cushioned Packaging!

"SPEED-RAP"

The corrugated board with the wider kraft liner ... now in rolls!

GET THE FACTS!
A free sample of "Speed-Rap" plus full details and prices are yours for the asking. Write today!

Manufactured under U. S. Patent 2,553,923.

Two or three handy rolls of "Speed-Rap" in standard widths take the place of large inventories of cut-to-size sheets.

Space saving "Speed-Rap" rolls can be mounted beneath the work table and cut to length as needed. A simple metal former opens the paper flaps automatically . . . readies "Speed-Rap" for immediate use.

"Speed-Rap" won't knock holes in your packaging budget. It actually saves you money; helps you make neater, less bulky packages . . . faster.

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We combine plastics, fabrics, foils and paper for functional and decorative purposes, including heat-sealing foil, jar cap liner stock, electrical insulation, aluminum foil and paper or board, and other made-to-order products.

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We manufacture a complete line of barrier materials which protect products from damage from handling and the elements. These materials are made to comply with a wide range of government packaging specifications.

THE FLOYD A. HOLES CO.

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in ALUMINIUM FOIL
To the manufacture of packaging foil of every kind, plain or printed, coated or laminated, Venesta Ltd. bring the knowledge that comes from long experience. Venesta were already making foil for packaging long before its unique protective properties were widely recognised. To-day their rolling plant is amongst the largest and best-equipped in the world. In technical skill, in mechanical efficiency, in the selection of raw materials, and in their rigorous system of laboratory control, Venesta have the means to offer you top quality in aluminium foil for every packaging requirement. Whatever you need in foil, it will pay you to consult Venesta Ltd. and let them put you in touch with the nearest of their many agents in all parts of the world.
A PRODUCT OF THE PACKAGING DIVISION
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T.A. 4536

DRESS PARADE

in *Clearsite*

Plastic Containers That Sell!

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SHATTERPROOF • FEATHERLIGHT

A colorful style parade—the latest of fashions in smart Clearsite *Plastic* Selling Containers. Clearsite is not only smart looking—it's *smart buying!* Clearsite Selling Containers are *Shatterproof*—eliminate normal breakage—save container and contents. They are *Featherlight*—about 1/5 the weight of glass. You can slash shipping or mailing costs! And, they are *Sales Bright*—compliment and protect your products. To turn packaging expense to *Profit Dollars*, investigate Clearsite—write today for descriptive literature. Address Dept. C-1.

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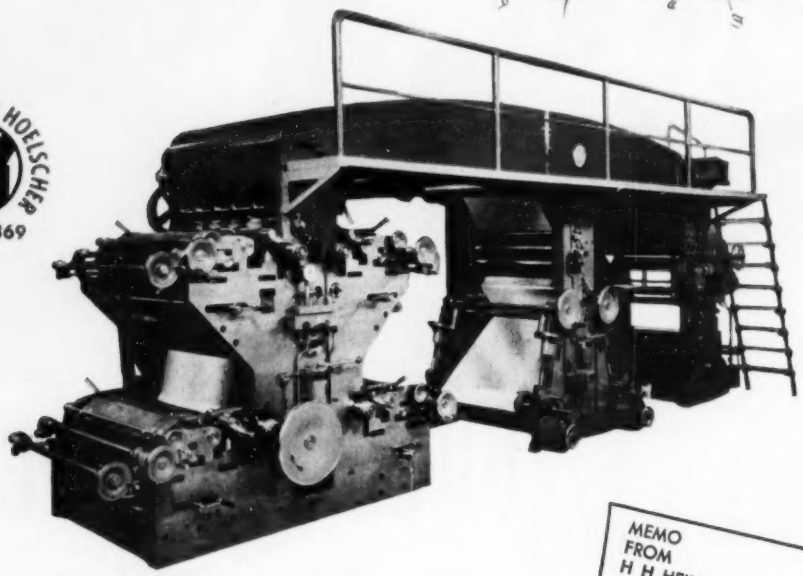
SINCE 1869



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- Built to American standard gear specifications.
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... ask me why!

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New heat-sealable container for chemicals...

VISKON®
nonwoven fabrics

VISKON IS ECONOMICAL!
Gives top performance where a "breather" type package is required—at little cost.

VISKON IS HEAT-SEALABLE!
Generally, VISKON seals at between 350° and 500°F, corresponding with dwell time and jaw pressure.

VISKON IS STRONG, DURABLE!
Holds its shape, yet is soft and flexible. Has exceptionally high *wet* strength.

VISKON IS NON-TOXIC!
It's tasteless, odor-free, completely sanitary for use as a container. Lint-free and non-raveling.

VISKON® nonwoven fabrics
... another product to fit today's needs by
THE VISKING CORPORATION
NORTH LITTLE ROCK, ARKANSAS

...ideal where porosity, product breathing, absorption, diffusion, infusion and wet strength are needed!

Amazing heat-sealable **VISKON** offers a trend in modern packaging for all types of products needing a "breather" container, yet protects and delivers measured amounts to the user. **VISKON** is economical, gives top performance with new outstanding features for better consumer acceptance.

VISKON is made of rayon and cotton fibers bonded with cellulose . . . with characteristics ideally suited for packaging. Heat-sealable **VISKON** is non-raveling, lint-free, odorless, tasteless, non-toxic and completely sanitary.

VISKON is furnished in mill rolls, tapes or sheets . . . in a large selection of weights and grades in either cotton or rayon fabric. Whatever *your* container problem, investigate **VISKON** today. Mail coupon below for complete information and samples.

Please send more information about VISKON nonwoven fabrics for use as a product container.

THE VISKING CORPORATION, Dept MG
Box 72, North Little Rock, Arkansas
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Company .....
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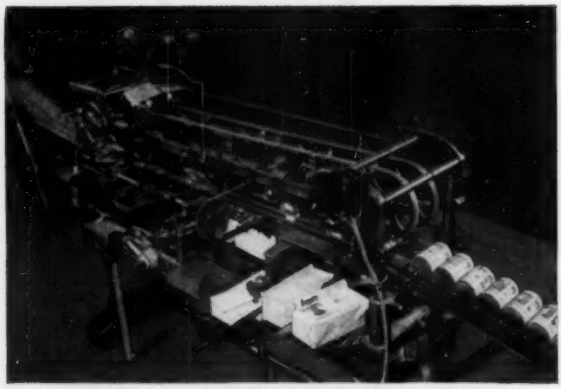
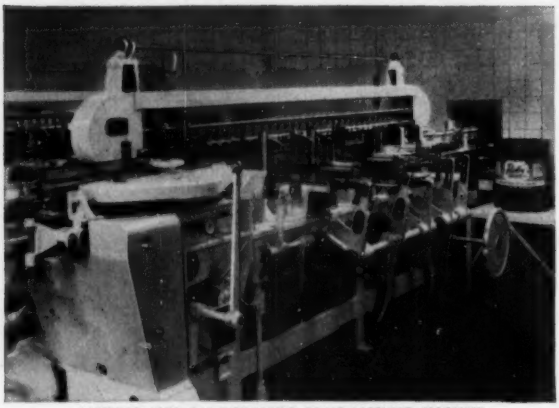
City ..... *Zone* ..... *State* .....



LABELING CANS ON STANDARD KNAPP LABELING MACHINE



LABELING JARS ON PNEUMATIC SCALE LABELING MACHINE

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There's a laboratory-developed, tested and controlled PAISLEY scientifically designed Adhesive for every fabricating, manufacturing, product labeling and sealing operation. Buy your *Adhesives the scientific way. Send for an Adhesive Operation Data Sheet. Fill in and return it to our laboratory for analysis and recommendations. Get the ONE* best *Adhesive for the SPECIFIC operation.* Also send for new Bottle Labeling Technical Service Bulletin No. 21. *Write today. There's no obligation.*

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WHEN YOU USE . .

WHATEVER your adhesive operation "Put it up to Paisley!" Regardless of (1) the type or speed of machine or hand operation; (2) kind of materials to be bonded; (3) type of container surface to be sealed or labeled, or other consideration; you can depend upon our laboratories to develop the *one best* Adhesive for the job. Determining the formula and maintaining absolute quality controls in each succeeding shipment, will not cost you one penny more. We invite you to use this *free* Paisley Scientific Adhesive Service. Just send for our Adhesive Operation Data Sheet. It's a very convenient form which you fill in and return. Upon receipt, our skilled adhesive engineers will quickly study your problem and make specific recommendations. If you want *better results* in your gluing or packaging operations, don't wait . . write for your Data Sheet TODAY!

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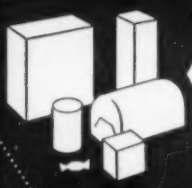
Whether your needs are large or small . . . our half century of know-how . . . our research department . . . our art and engineering staffs . . . are at your service to help solve your packaging problems . . . without obligation.

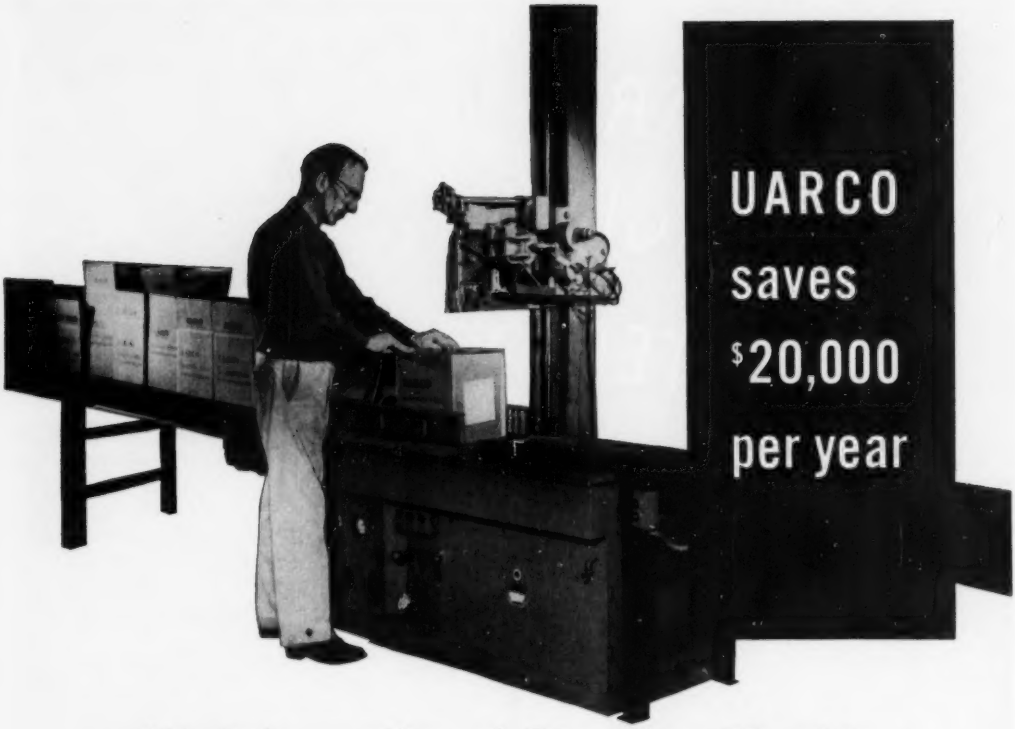
QUALITY Integrated production—our own paper mill gives Quality Control at the source, which guarantees Uniformity.



- WAXED PAPERS
- LAMINATED ALUMINUM FOIL
- BARRIER MATERIALS
- *ROLLS*
- *SHEETS*
- *BAGS*

NEWARK PARAFFINE & PARCHMENT PAPER CO.

50 JELLIFF AVENUE, NEWARK 8, N. J. · MILLS AT NEWARK, N. J. and PITTSTON, PA.



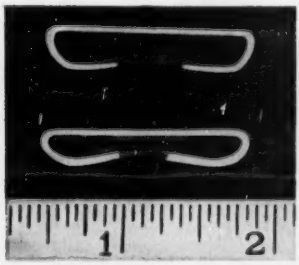
with International Stapling Machine

Uarco, Inc., Chicago manufacturers of business forms reports a saving of more than $1650 a month with an International Retractable Anvil stapling machine.

The stapler, a double headed, air operated model priced at only $3,400 (it almost paid for itself in 60 days), is used to close filled cartons from the outside, top and bottom simultaneously. Daily volume is 2,500 cartons of various sizes . . . in a 12-hour period.

75% SAVING IN MAN HOURS . . . Prior to 1947, Uarco closed cartons by another method. Processing 2,500 cartons required 48 man-hours. Today, with an International Retractable Anvil Stapling Machine, it takes only 12 man-hours to close 2,500 cartons.

"HIGHLY SATISFACTORY". . . Here's what John A. Tanovich, chief layout-material handling engineer has to say about International stapling equipment: "We have found your C2E carton stapling machine a highly satisfactory unit with the desired flexibility to staple any of our cartons to meet the packaging requirements of interstate shipments. When coupled with our system of conveyors, this stapling machine accounted for a minimum of $20,000 per year as its share of packaging savings."



All International Staple Machines feature the penetration control which permits either standard or concealed staple clinching as shown in actual size cross section view at left.

What's your closure problem? If you ship in corrugated or fibre containers, an International staple machine can close them better, faster and more economically. Write for detailed information.

a seal of security

INTERNATIONAL STAPLE & MACHINE CO.

806 Herrin Street, Herrin, Illinois

Distributors in principal cities

HIGHEST QUALITY ALUMINUM FOIL

... manufactured in one of America's most modern foil plants where a sincere effort is made to meet the customers' needs

ALUMINUM FOILS, INC.

exactly DUPLICATES LITHO PRESS GAUGES

Streamlined . . . simplified . . . faster . . . this new Duplex Slitter is the very last word in advanced engineering. It's designed to up your production, cut rejects, cut downtime. Outstanding is the ability to *exactly* duplicate litho press gauges. So unusual are the savings it offers, that you can easily justify the replacement of other slitters only three or four years old.

Write! . . . you'll find it will pay.

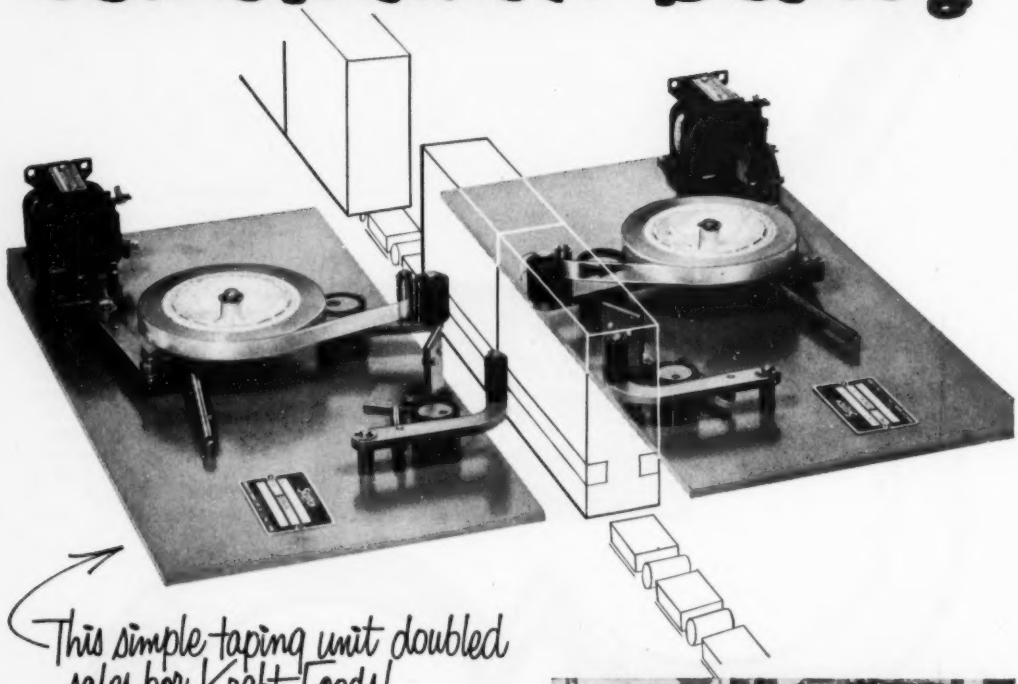
Sheet width up to 36"
Sheet length up to 36"
Slits up to 100 sheets a minute

BALDWIN BLH LIMA-HAMILTON

HAMILTON DIVISION
Hamilton, Ohio

BALDWIN-LIMA-HAMILTON
Philadelphia 42, Pa. • Offices in Principal Cities

Combination Deals?



This simple taping unit doubled sales for Kraft Foods!

Here's a fast, simple way to create a securely banded combination deal that's all ready for the retailer's shelves . . . a deal that makes a hit with retailers and customers alike!

This "Scotch" Brand Combination Package Sealer bands any combination of boxes, jars or bottles . . . applies tight-sticking strips of tape to form the items into an easily handled, attractive unit.

For this Parkay Margarine deal, twin units of the Sealer applied matching strips of "Scotch" Cellophane Tape automatically as the deal moved by on a conveyor mechanism.

Tape does it quicker, better, cheaper!

3M SERVICE REPRESENTATIVES worked closely with engineers of Kraft Foods Company in designing this semi-automatic assembly line that cut costs 50%. Why not let them work on your problem, too? The "Scotch" Brand line includes the world's largest selection of tapes and taping machinery, plus facilities for the design and manufacture of specialized installations. Write Dept. MP-13, 3M Co., St. Paul 6, Minn., and a representative will call promptly.

SCOTCH BRAND Pressure-Sensitive Tapes

3M

The term "Scotch" and the plaid design are registered trademarks for the more than 200 pressure-sensitive adhesive tapes made in U.S.A. by Minnesota Mining & Mfg. Co., St. Paul 6, Minn.—also makers of "Scotch" Sound Recording Tape, "Underseal" Rubberized Coating, "Scotchlite" Reflective Sheeting, "Safety-Walk" Non-slip Surfacing, "3M" Abrasives, "3M" Adhesives. General Export: 122 E. 42nd St., New York 17, N. Y. In Canada: London, Ont., Can.

Only Steigerwald

EMBOSSED FOIL SEALS

add so much to your product for so very little

SEND THIS FORM FOR INFORMATION

on

Steigerwald Embossed Foil Seals

A. M. Steigerwald Co.
910 W. VAN BUREN ST.
CHICAGO, ILLINOIS

Creators and Producers of all types of fine labels

Labelsmiths

Our company name is_____

Our product name is_____

Other label copy is_____

☐ Without obligation we want you to design a New Foil Label and give us a price on the following quantities_____

☐ We now use foil labels like the sample attached. Please quote prices on the following quantities

_____ _____ _____

ATTACH YOUR PRESENT LABEL TO THIS FORM

Mark reply for: Mr._____

CHARLOTTE, MICH.
L. M. Clark
612 So. Pleasant St.

CLEVELAND
A. C. and J. S. Foster
310 Hippodrome Bldg.
CHerry 1-5488

DANVILLE, ILL.
F. F. Michenfelder
1208 Sheridan St.
DAnville 4447J

LOUISVILLE
Jos Herrmann
416 Jefferson St.
WAbash 1357

MEMPHIS
Edward Magness
278 S. Front St.
MEmphis 8-2574

MINNEAPOLIS
J. E. and J. L. Neer
2329 DuPont Ave., So.
LOcust 5389

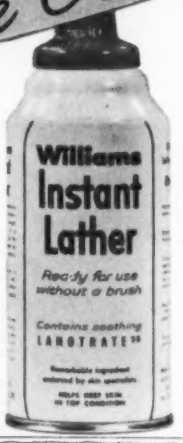
NEW YORK, N. Y.
John H. McLaren
646 W. 125th St.
MOnument 2-0237

OAKLAND
John S. Penton
880 Sixteenth St.
TEmplebar 2-1745

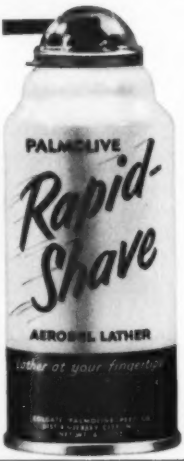
ST. LOUIS
Marvin Yates Company
Arcade Building
ADelaid 6741

SPRA-TAINER Does It Again!

The Old



The J. B. Williams Co.,
Glastonbury, Conn.



Colgate-
Palmolive-Peet Co.,
Jersey City, N. J.

ANOTHER GREAT AND
GROWING USE FOR

CROWN
SPRA-TAINER

Order Changeth . . . to NEW!

Boyle Midway, Inc.,
New York City

Alfred D.
McKelvy Co.,
New York City

Dyna-Shave, Inc.,
Chicago, Ill.

Mennen Co.,
Newark, N. J.

Consolidated
Royal Chemical Co.,
Chicago, Ill.

Campbell
Products Co.,
Bensenville, Ill.

The world's most popular Shaving Creams are now pressure-packaged in Crown SPRA-TAINER, for creamy-foamy-instant lather at the touch-of-a-finger. SPRA-TAINER'S exclusive "No Side Seam—No Top Seam" construction protects products better; its "modern-design" *sells* products *faster!* If your product can be dispensed in a foam or spray it belongs in SPRA-TAINER.

The same creative ingenuity and technical skill which characterizes SPRA-TAINER is also reflected in Crown's complete line of cans for almost every industry.

CROWN CAN

Division of

CROWN CORK & SEAL COMPANY

Philadelphia, Chicago, Orlando, New York, Baltimore, Boston, St. Louis

CROMWELL

proudly presents its new line of protective papers

FLEXIBLE-LAMINATED IMPREGNATED

"Quality Built In"

Now Cromwell—famous for quality for 33 years, laminates finest Kraft to finest Kraft in a wide variety of papers for industrial, agricultural, construction and packaging uses. Unique new equipment, specially designed by Cromwell, gives you the most consistent uniformity in highest quality laminated papers.

CROMWELL FLEX-LAM

FOR: Waterproofness • Flexibility • Conforming Packaging . . . Similar to Flex-Fibre, but without glass fibre reinforcement. An ideal material where ordinary strength is indicated.

CROMWELL FLEX-FIBRE

FOR: Waterproofness • Strength • Flexibility Puncture and tear resistance • Conforming Packaging . . . flexible enough to conform to the product, yet strong as a flat sheet. Acid, mold and wickproof glass fibres are swirled into the waterproof laminant, and the sheet made flexible *after* reinforcing and lamination.

CROMWELL FIBRE-KRAFT

FOR: Waterproofness • Strength • Puncture and tear resistance . . . a flat non-flexible laminated sheet reinforced by swirling acid, mold and wickproof glass fibres into the waterproof laminant.

CROMWELL FERRO-PAK

FOR: Corrosion Prevention . . . a Volatile Corrosion Inhibitor paper. Invisible gases emanating from the paper protect ferrous metal parts from corrosion—even when those metal parts are not in actual contact with the inhibitor.

Cromwell embosses instead of creping—and embosses *after* lamination . . .

Creping breaks down Kraft fibres and leaves weak spots. Cromwell embossing renders Kraft just flexible enough to provide maximum tear, puncture resistance and a conforming wrap—*without* weakening the Kraft! Post laminant embossing ensures a perfectly uniform sheet with perfectly uniform lamination.

free samples . . .
Write for Cromwell's new folder of Laminated Paper Samples and completely detailed descriptions of each.

Cromwell laminated papers are available in rolls, sheets or bags

CROMWELL PAPER COMPANY, 4801 S. Whipple St., Chicago 32, Ill. • Factories at Chicago and Jersey City, N. J.

Prize Packages

IN ANY CEREAL ROUND-UP

Formed, filled and sealed by PNEUMATIC equipment

No one could deny that General Mills are plenty smart about promoting the sale of their breakfast food trio — Wheaties, Kix and Cheerios. Is there a young'un of your acquaintance who hasn't heard of "Breakfast of Champions"® . . . and who doesn't know the Lone Ranger?

Likewise, no one can deny that General Mills are plenty smart about packaging their cereals, too. They use Pneumatic equipment . . . including the efficient Double Package Maker combination which forms a "package within a package" for maximum product protection.

As a user of Pneumatic machines General Mills is one of the many leading producers of nationally distributed brands that depend on this proven method of volume packaging at a "lower cost per container." This is good evidence for *you* to act on, when you're modernizing your packaging operations.

Pneumatic Double Package Maker Installation at General Mills Modern Cereal Plant, Buffalo, New York

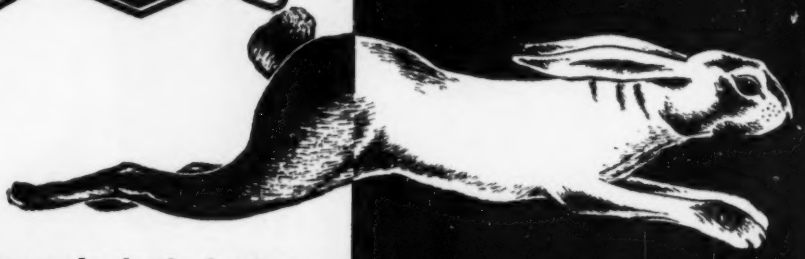
PNEUMATIC

PNEUMATIC SCALE CORP., LTD., 82 Newport Avenue, Quincy 71, Mass.
Also: New York; Chicago; San Francisco; Los Angeles; Seattle; Leeds, England.

Packaging and Bottling Equipment

ARENCO

World's Favorite Tube Filler



now exclusively features

"JACK RABBIT CHANGEOVER"

Only 15 minutes to change materials
Only 15 minutes to change tube sizes
—Do both* in 30 minutes!

While many older style tube fillers remain down so long that changeover losses of 5,000 to 15,000 filled tubes are not uncommon, production losses during size and material changeovers on the improved Arenco Filler featuring "Jack Rabbit Changeover" range from 750 to 1500 pieces.

And changing over the Arenco is now so very simple that no mechanical skill is required. In most installations, the machine's operator will do the job unassisted.

The Arenco is Versatile. Not only does the Arenco fill collapsible tubes of all sizes up to 250 cc (8¾ ounces), but it fills jars, vials and ampoules, too. With an Arenco you can fill anything which conceivably might be packaged in these containers, from water thin suspensions to heavy non-flowing compounds.

The Arenco is Accurate. Of all fillers, the Arenco is the only one which employs a sterilizable stainless steel single cylinder pump that both meters and fills. Thanks to this feature, even at speeds of 55 fills per minute, accuracy of ±1% is maintained.

Standard equipment on the Arenco Filler includes hopper or filling head to fit your product, automatic no tube-no fill, and the many other features mentioned here—all at no extra cost. The nearest Arenco representative can supply full details.

NEWEST MODEL ARENCO HAS THESE ADDITIONAL EXCLUSIVE FEATURES

- improved cap tightening with cap spun to full closure
- more effective air blast tube cleaning
- change parts cost 50% less than formerly
- greater operator comfort—no noise, no vibration.

* One individual working alone. Two people working together do the entire job in 15 minutes.

ARENCO Machine Co.
INCORPORATED
25 West 43rd Street, New York 18, N. Y.

Representatives

R. P. Anderson Co., 317 Texas Bank Bldg., Dallas 2, Texas
Tom McLoy, P. O. Box #14, Port Deposit, Maryland
Packaging Equipment, Inc., 2013 Olive St., St. Louis 3, Missouri
Kruse Packaging Machinery, 5807 W. North Ave., Chicago 39, Ill.
Canada: Richardson Agencies, Ltd., 434 King St., West Toronto

$1,500,000,000 honeymoon

—In 1953 over three million newlyweds will start shopping for their households. In the same year, they will spend over one and a half billion dollars on grocery products, yet they have few established brand preferences. An appealing package—a package made by Marathon—will help them make up their minds.

Marathon Corporation, Menasha, Wis.: *from tree to finished package, Marathon's facilities include—assured pulpwood sources—pulp and paper plants—ink, engraving and printing plants—years of creative design and merchandising experience.*

Marathon Corporation
packaging that sells food

From the Gardner *Gallery of famous American Packages*

An Attitude

. . . THE UNSEEN INGREDIENT

Actually, it *can* be seen. Look closely at any product that has become an American buy-word—and you'll see more than the physical materials of which it is made.

You'll see the attitude of men determined to make and market a superior product. Look closely at any Gardner carton—and you'll see reflected that very same attitude.

Here at Gardner we believe in never being quite satisfied with a good job. We feel an obligation to ourselves—and to our customers—to do even better, tomorrow, what we have gained recognition for doing well today.

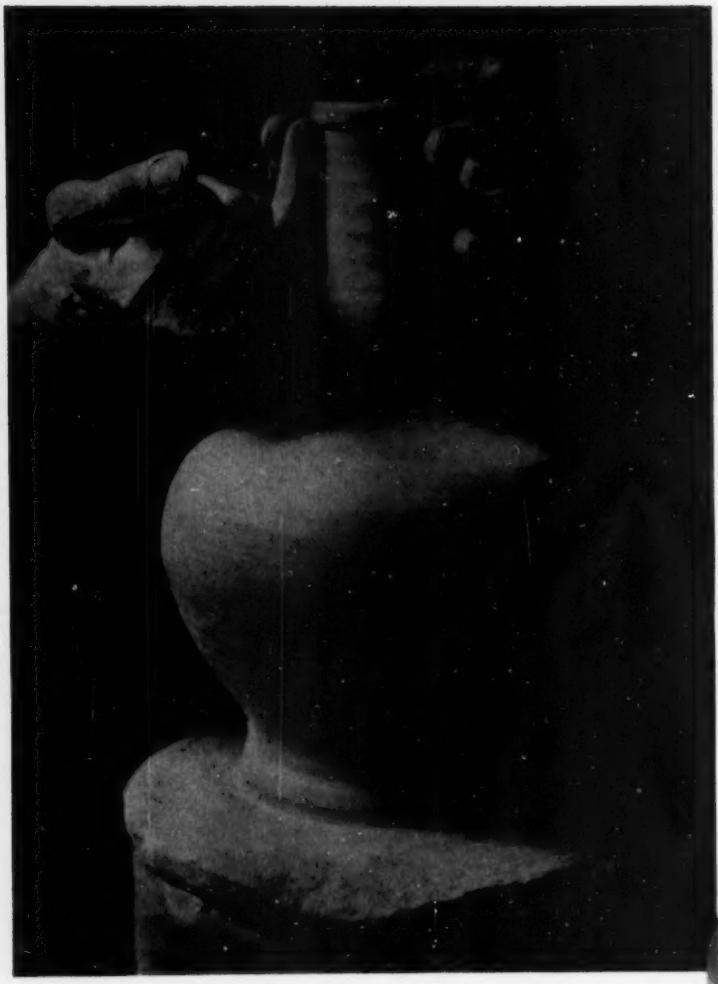
We think that's an important reason why you'll find so many of America's most famous products packaged in Gardner cartons.

THE GARDNER BOARD AND CARTON CO.

Manufacturers of Folding Cartons and Boxboards

GENERAL OFFICES: Middletown, Ohio—PLANTS: Middletown, Ohio; Lockland (Cincinnati), Ohio
Sales Offices in Chicago, Cleveland, New York, Philadelphia, Pittsburgh, St. Louis

GARDNER



The ultimate of quality, care, craftsmanship ...go into *Rowell Boxes*

The creative art of the master pottery-maker finds its counterpart in the exacting skill Rowell devotes to making fine set-up boxes . . . a skill known by packagers everywhere.

E. N. Rowell Co. Inc.
Mfrs. Fine Paper Boxes
Batavia,
N. Y.

DEVELOPED FOR THE ARMED FORCES • NOW AVAILABLE TO YOU

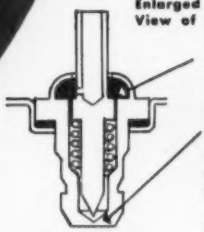
NEW DILL LEAK-PROOF AEROSOL VALVES

GUARANTEES PERMANENT "SHELF-LIFE"
FOR SELF-DISPENSING PRESSURIZED PRODUCTS

*U.S. PAT. APPLIED FOR

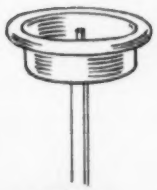
The sensational new Dill Aerosol Valve completely eliminates the serious problem of "duds" in pressurized products. *Gas positively cannot escape through this new non-pierced valve. Nor can contents of the can touch and corrode the valve shut-off seal.* Pre-use leakage that causes costly stock loss and user dissatisfaction is impossible. Check this money-saving, highly valuable merchandising feature for your product now—and the important further advantages in filler production operations. We invite your request for test samples and the consultation of our engineers.

Enlarged Cross-Section View of Dill Valve



Full Enclosure of Shut-off Valve Seat
PREVENTS CORROSION

Non-Pierced Valve Opening.
POSITIVELY LEAK-PROOF
Gas leakage is impossible because valve opening is not pierced until ready to use.



VALVE UNIT CAN CLOSURE
No button on closure eliminates damage to cans caused by button interference with crimping operation.
Valve unit available for any type or size of can.

Adds Attractive Salability to Your Product

NEW DISPENSING UNIT WITH PROTECTIVE CAP
Completely pre-assembled for quick, easy attachment to can closure. Includes dispensing button, collar with spray guide, protective cap and insert tag with easily understandable directions for piercing valve and operating spray. Non-turnable button locks spray opening in collar guide.

Available in any color or combination of colors and with your name molded in cap on minimum orders.

INSURES THE SHELF STABILITY OF YOUR PRODUCT —

THE VALVES WITH *Super Seal* SAFETY

DILL AEROSOL VALVES

FOR BETTER PROTECTION

BAG IT

THE VANANT WAY

Engineered protection and economy go hand in hand when you use Vanant bags. Whatever type and style of flat or square (gusseted) bag your product requires, Vanant makes it. Modern high speed machines fabricate, to your specifications, any available material from plain kraft papers to the laminated, glassine and other greaseproof and waterproof types. Be sure to check with Vanant before you buy!

Ask Your Vanant Field Engineer About the New V-C-I*, Lined DUPLEX Bag

VANANT

ENGINEERED PACKAGING

730 W. Virginia St., Milwaukee, Wis.

Plant: Tomah, Wis.

Also Converters of Military Specification

BAGS BARRIERS CASE LINERS

POLYETHYLENE AND OTHER TRANSPARENT FILMS

Bud Hesler
60 Love St.
Boston 21, Mass.

Leonard Bagel & Assoc.
[illegible]
Philadelphia, Pa.

R. M. Rentlinger & Assoc.
Hoosier Bldg.
Dayton, Ohio

Allied Commodities Co.
Andrus Bldg.
Minneapolis 2, Minn.

Allied Commodities Co.
822 Dwight Bldg.
Kansas City 6, Mo.

King & Anderson
1858 Market St.
San Francisco 3, Calif.

Guy Jeter & Assoc.
77 Walnut
Montclair, N. J.

Jerry Goldsmith Assoc.
1806-8 Mussey Bldg.
Baltimore 2, Md.

Jerry Goldsmith Assoc.
630 Washington St.
Reading, Pa.

Protective Packaging Co.
342 S. Dearborn St.
Chicago 5, Ill.

Standard Parts & Equip Co.
904 N. Main
Fort Worth, Texas

King & Anderson
3835 N. Fletcher Dr.
Los Angeles, Calif.

W. T. Rogerstown
322 1st Avenue W.
Seattle 1, Wash.

American Paper Co.
827 So. 12th St.
Milwaukee 4, Wis.

SAMPLE OF

YOUR CARTONS AND PACKAGES CAN NOW BE COLORFUL ADVERTISING VEHICLES FOR YOU . . . CARRYING YOUR OWN MESSAGE OR TRADE MARK . . . AT NO EXTRA COST.

A SINGLE ROLL OF 600 FEET CONTAINS 600 TWELVE INCH MESSAGES PRINTED IN FOUR COLORS . . . 250 ROLLS (3") GIVE YOU 150,000 MESSAGES.
A REPETITIVE ADVERTISING VEHICLE ADDED TO A NECESSARY SEALING TAPE.

NOW BEING USED BY MANUFACTURERS AND DISTRIBUTORS THROUGHOUT THE UNITED STATES.

- ★ THE STANDARD COLORS ARE YELLOW, RED, BLUE AND BLACK.
- ★ FREE IDEAS AND SKETCHES SUBMITTED WITH 25 BUNDLE MINIMUM ORDERS.
- ★ EASY-TO-APPLY, NON-CURLING SEALING TAPE
- ★ PADLOCKED, PILFER-PROOF PACKAGES
- ★ DUST AND DAMP FREE SEALED CARTONS
- ★ WATER-PROOF WRAPPING FOR SAFE STORAGE

ATLANTIC GUMMED PAPER CORPORATION
PRINTED TAPE DIVISION
[illegible]

BRANCH OFFICES: PHILADELPHIA • PITTSBURGH • CHICAGO • BUFFALO • BOSTON • [illegible]

"On-to-Sta" 4 color printed sealing tape

available to you

with your own advertising message . . . . and your company's name

ATLANTIC GUMMED PAPER CORP.
PRINTED TAPE DIVISION

THE WELSH TERRIER is one of the oldest terrier breeds, originally used in hunting foxes and badgers. Today he is prized as a good-natured playmate for children. Height, 15 inches; weight, 20 pounds. The hard dense coat is black and tan.

To protect the reputation of your own product

Buy Boxes with a Pedigree

SHELF PACKAGES or cans which bear the scars of knocks and jolts of shipment can injure a brand name reputation which has taken years to build.

This is one reason why R. J. Reynolds Tobacco Company ships Camel Cigarettes in Union boxes—the boxes with a pedigree.

Union boxes stand up under all ordinary shipping conditions and deliver shelf packages fresh and unscarred to dealers' sales floors. So it is not surprising that every month finds more makers of national brand products shipping in Union boxes—the boxes with a pedigree.

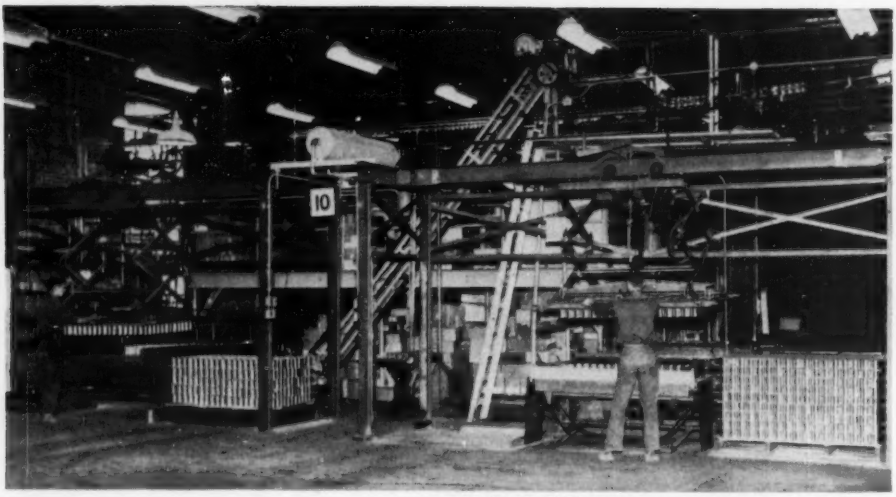
Dependable Packaging Since 1872

UNION Corrugated Containers

UNION BAG & Paper Corporation

Principal Offices: WOOLWORTH BLDG., NEW YORK 7, N. Y.

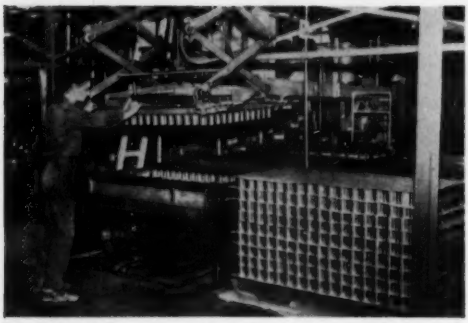
Corrugated Container Plants: SAVANNAH, GEORGIA • CHICAGO, ILLINOIS • TRENTON, NEW JERSEY



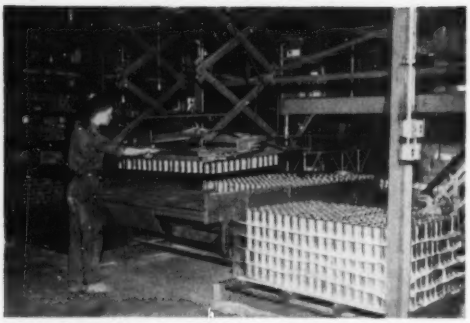
STANDARD-KNAPP bright can palletizing and de-palletizing unit in large U. S. food canning plant. Cans are palletized at high speed after cooling by equipment at right and de-palletized after storage for labeling on unit at left.

LEADING CANNER MECHANIZES BRIGHT CAN PALLETIZING

STANDARD-KNAPP EQUIPMENT PALLETIZES 600 CANS PER MINUTE...DE-PALLETIZES 1200 CANS PER MINUTE



PALLETIZING suction head, equipped with vacuum cups, picks up full layer of cans. Layer is then gently deposited on pallet. Can tiers are separated by kraft paper sheets which bind load together and limit "leaker" spoilage. Operator controls lifting and releasing by means of push buttons.



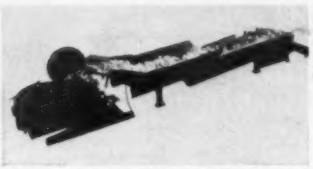
DE-PALLETIZING unit's vacuum cups remove layer of cans from pallet. Operator swings load gently onto a Standard-Knapp unscrambler, which delivers cans in single file to a booster for conveying to a labeler.

Compare your present bright can handling method with the Standard-Knapp system: One operator palletizes 600 cans per minute, easily, without laborious effort. A second operator de-palletizes them for labeling at a rate of 1200 cans per minute, again working easily. You get more cans in a given space, because the kraft liners take much less room than wooden separators. Leaker damage is not only strictly confined, but leakers can be readily detected and removed during de-palletizing.

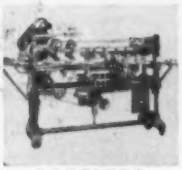
Right Down The Line...STANDARDIZE With STANDARD-KNAPP EQUIPMENT

FOR CAN LINES–STANDARD-KNAPP PROVIDES

UNLOADERS



UNSCRAMBLERS



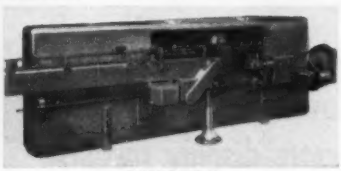
LABELERS

PACKERS

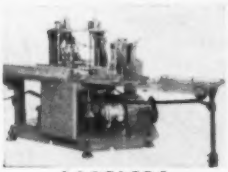
also: CONVERGERS, PALLETIZERS and DE-PALLETIZERS, BOOSTERS, CARTON MAKE-UP UNITS, CASE GLUERS and SEALERS

FOR GLASS LINES–STANDARD-KNAPP PROVIDES

UNLOADERS



RINSERS

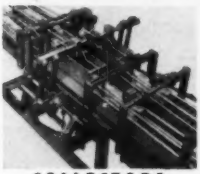


LABELERS

PACKERS

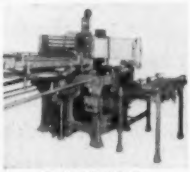
also: CONVERGERS, UNSCRAMBLERS, CASE GLUERS and SEALERS, CARTON MAKE-UP UNITS, WOODEN CASE CLEANERS

FOR CARTON & BAG LINES–STANDARD-KNAPP PROVIDES

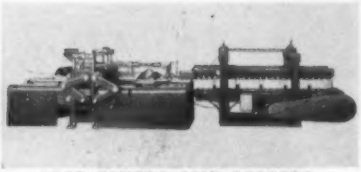


COLLECTORS

BALANCED LINE DIVIDERS



PACKERS



CASE GLUERS AND SEALERS

FOR ALL LINES–STANDARD-KNAPP PROVIDES

know-how on all phases of your packaging operations . . . expert guidance in planning machine layout . . . localized engineering, sales and service.

FOR THE COMPLETE S-K STORY

write for catalogs describing machines for your industry to Dept. K, Standard-Knapp, division of Emhart Mfg. Co., Portland, Conn.

Only the best is good enough

STANDARD-KNAPP

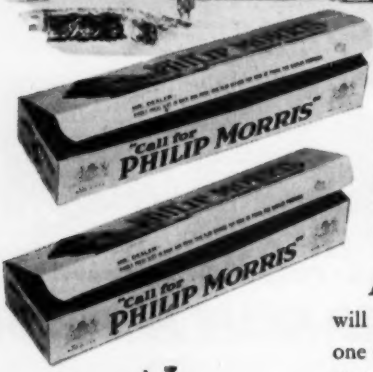
DIVISION OF EMHART MFG. CO.

PORTLAND, CONNECTICUT

SALES, ENGINEERING, SERVICE OFFICES

ATLANTA, BOSTON, CHICAGO, CLEVELAND, HOUSTON, LOS ANGELES, NEW YORK CITY, SAN FRANCISCO, SEATTLE, ST. LOUIS

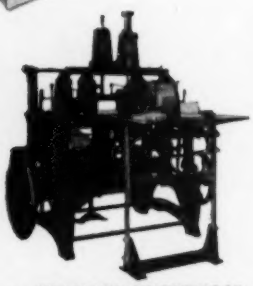
Again the choice is **US**



At the huge, new PHILIP MORRIS plant in Louisville, Brightwoods form distinctive cigarette display cartons.

A battery of U. S. Automatic Brightwood carton-forming machines will help package the output of Philip Morris' new Louisville plant — one of the largest cigarette factories in the world. The Brightwoods precisely form and glue these attractive display cartons at high speeds that easily keep pace with cigarette machine production.

U. S. Automatic Brightwood carton-forming machines are now available in two types, each built in several models. The *Standard* is a versatile machine which is suited to handle a wide range of blank sizes. Changeover is fast and simple. Speeds up to 60 finished boxes per minute can be attained. The new *High Speed* machine is one that offers the user production speeds up to 120 finished boxes per minute. Both models employ the exclusive Brightwood method of high pressure forming which results in firmly-glued boxes that are unsurpassed for squareness and appearance. Write *US* for complete details.



the **STANDARD BRIGHTWOOD**
Forms hinged-cover, telescope, trays, tapered and one piece set-up boxes in a wide variety of sizes at speeds up to 60 per minute. High Speed Models also available.

U. S. AUTOMATIC BOX MACHINERY CO., INC.
Owning and Operating NATIONAL PACKAGING MACHINERY CO. • CARTONING MACHINERY CORP.

122 ARBORETUM ROAD, ROSLINDALE, BOSTON 31, MASS.

Branch Offices: New York ★ Cleveland ★ Chicago

Net and Gross Weighing
Package Forming and Filling
Carton Sealing, Lining,
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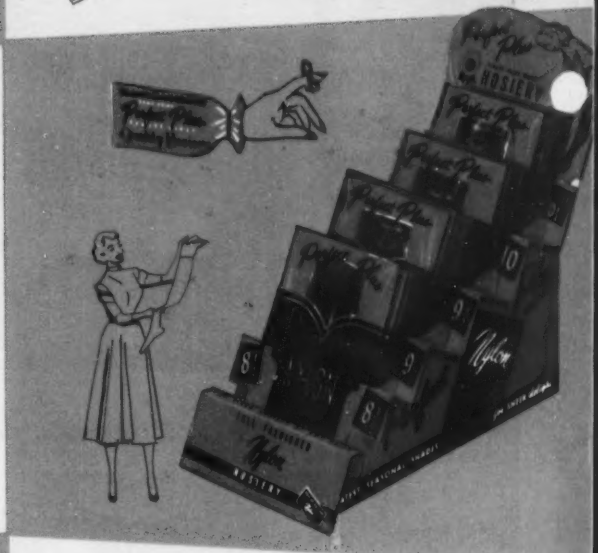
YOUR STORY'S TOLD...

YOUR CUSTOMERS SOLD WITH

MILPRINT

LITHOGRAPHED DISPLAYS



Cash registers play sweeter tunes when Milprint lithographed displays are on the job! Milprint display artists and printing craftsmen combine a wealth of sparkling ideas and practical merchandising experience with unmatched technical facilities to create displays that stop customers . . . urge them to investigate . . . invite them to buy.

Whatever your display problems, Milprint answers them with a fresh, lively approach and brilliantly attractive production. That's why it's good business to call your Milprint man—*first!*

Milprint INC.
PACKAGING MATERIALS
LITHOGRAPHY & PRINTING

Printed Cellophane, Pliofilm, Polyethlene, Acetate, Glassine, Foils Folding Cartons, Bags, Lithographed Displays, Printed Promotional Material

General Offices, Milwaukee, Wisconsin
Sales Offices in Principal Cities

This insert lithographed by Milprint

When you're hunting for real pleasure, *say men who know good whiskey, fix yourself a drink made with smooth, satisfying Guckenheimer.**

Guckenheimer Whiskey is sealed with a Crown Screw Cap and a cellulose outer seal . . . a combination that provides sealing dependability as well as protection against tampering and sampling.

The Crown Screw Cap, with specially selected liner and alcohol-resisting inside coating, is becoming more popular every day with manufacturers of wines and liquors. It gives a sure seal and is easily applied during production. Consumers like the Crown Screw Cap, too, because of its simple removal and the fine re-seal it makes.

The next time you're ready to order closures . . . whether it's for an alcoholic beverage or some other product . . . call in your Crown Closure Representative . . . you'll be glad you did. Crown Cork & Seal Company, Baltimore 3, Maryland. *World's Largest Makers of Metal Closures.*

CROWN CLOSURES

Approved by millions of housewives

*GUCKENHEIMER WHISKEY is blended and bottled by The American Distilling Co., Inc., Pekin, Illinois and Sausalito, California.

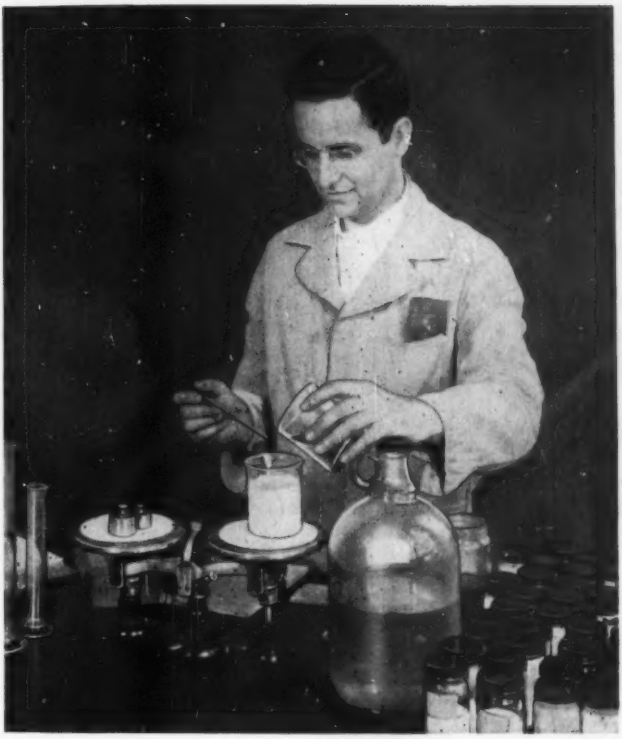
Working for you to make BBD WHITE FLEXOGRAPHIC INKS ever whiter, ever better

This man may be a stranger to you . . . yet, day in and day out, he works for you.

As a member of BBD's flexographic ink research and development team, he does two important jobs for you: he tests new raw materials and new formulations; he develops special ink formulations to meet your most exacting requirements.

In addition to specialized knowledge this man and his laboratory colleagues have the added virtue of never being satisfied. No matter how good a BBD ink may be they try constantly to make it better. Is it any wonder, then, why BBD *white* flexographic inks are your best bet for whiter whiteness . . . cleaner, sharper reproduction . . . and finer printability?

We'll gladly give you more facts about BBD white inks — for any kind of film, foil and paper — and show you printed samples that prove their *whiter* whiteness. Just ask your nearest BBD office . . . or write direct to Bensing Bros. & Deeney, 3301 Hunting Park Avenue, Philadelphia 29, Pa.



GET BOTH FROM BBD

- Better, Whiter WHITE INKS
- "Shirt-Sleeve" Technical Service

Bensing Bros. and Deeney
SALES COMPANY
World's Largest Makers of Flexographic Inks
PHILADELPHIA • CHICAGO • WAKEFIELD, MASS.
Pacific Coast: A. M. BOJANOWER, Los Angeles
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Canada: MANTON BROS., Toronto

Your product needs help in today's "*Help Yourself*" market

GIVE IT GLAMOROUS VISIBILITY IN CELANESE* *Acetate*

Transparent packaging can give your product the selling edge it needs in today's "help yourself" market. Sparkling clear containers demand attention . . . give your product a chance to sell itself . . . add a lifting look of glamor that makes sales easier, faster.

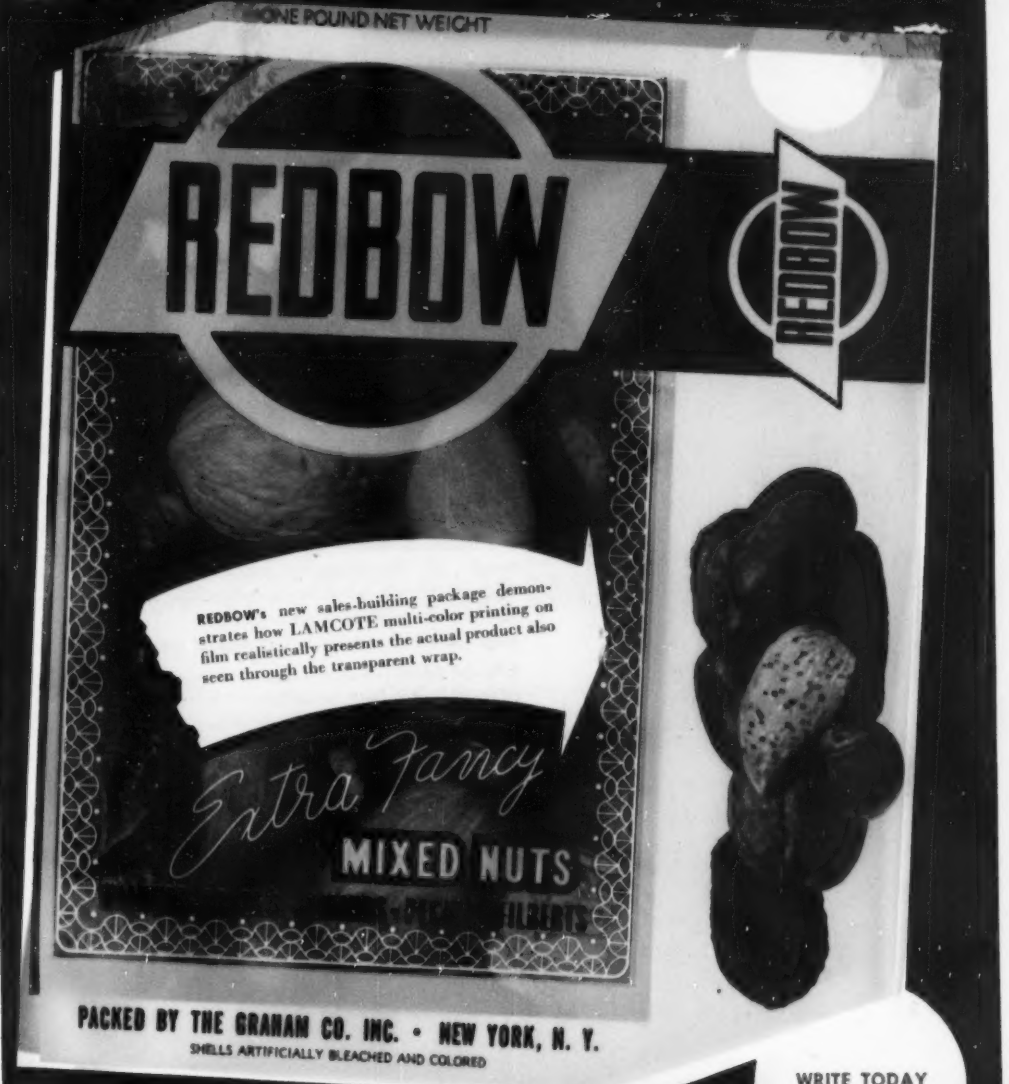
More and more merchandisers are using low-cost acetate containers to push their products. Acetate sells dime store items as well as luxuries . . . upgrades staples . . . multiplies combination sales of companion items.

You can buy Celanese acetate transparent containers in a wide variety of *stock* sizes and shapes. For names of container manufacturers and suppliers, write Celanese Corporation of America, Transparent Films Dept. 108-A, 180 Madison Avenue, New York 16, N. Y. In Canada, Canadian Chemical & Cellulose Company, Ltd., Montreal and Toronto.

Celanese* **Acetate** TRANSPARENT FILMS

*Reg. U. S. Pat. Off.

Another Packaging Achievement by LAMCOTE® MULTI-COLOR PRINTING


ONE POUND NET WEIGHT
REDBOW
REDBOW
REDBOW's new sales-building package demonstrates how LAMCOTE multi-color printing on film realistically presents the actual product also seen through the transparent wrap.
Extra Fancy
MIXED NUTS
PACKED BY THE GRAHAM CO. INC. • NEW YORK, N. Y.
SHELLS ARTIFICIALLY BLEACHED AND COLORED

WRITE TODAY

Send your present package. We'll suggest a wrap that will sell more of YOUR product. No obligation.

LAMCOTE PACKAGING DIVISION OF

ARVEY CORPORATION

SINCE 1905

3462 N. KIMBALL AVE., CHICAGO 18, ILL.

PLANTS AT CHICAGO . . . JERSEY CITY

At your age!

If you are over 21 (or under 101) it's none too soon for you to follow the example of our hero, Ed Parmalee, and face the life-saving facts about cancer as presented in our new film "Man Alive!". You'll learn, too, that cancer is not unlike serious engine trouble—it usually gives you a warning:

(1) any sore that does not heal (2) a lump or thickening, in the breast or elsewhere (3) unusual bleeding or discharge (4) any change in a wart or mole (5) persistent indigestion or difficulty in swallowing (6) persistent hoarseness or cough (7) any change in normal bowel habits.
While these may not *always* mean cancer, any one of them should mean a visit to your doctor.
Most cancers are curable but *only* if treated in time!

You and Ed will also learn that until science finds a cure for *all* cancers your best "insurance" is a thorough health examination every year, no matter how well you may feel—twice a year if you are a man over 45 or a woman over 35.

For information on where you can see this film, call us or write to "Cancer" in care of your local Post Office.

American Cancer Society

MAN ALIVE! is the story of Ed Parmalee, whose fear weakens his judgment. He uses denial, sarcasm and anger in a delightful fashion to avoid having his car properly serviced and to avoid going to a doctor to have a symptom checked that may mean cancer. He finally learns what a difference it makes (in his peace of mind and in his disposition) to know how he can best guard himself and his family against death from cancer.

A lot of things **CAN HAPPEN** *in 50 years*

In 1903 the Wright brothers' fragile powered glider stayed in the air long enough to be called a successful flying machine. The Age of Flight was born.

In 1903 a new paper mill started operations in Rittman, Ohio. As The Ohio Boxboard Company it began a career which has carried it into the top brackets of paperboard, carton, and container production.

No previous half century in history can match the dramatic strides made in transport, communication, the physical sciences—and package merchandising—during this amazing half century.

The Ohio Boxboard Company, in its 50th Anniversary year, congratulates the packaging departments of U. S. industry on their contributions to the art and science of moving merchandise from manufacturer to consumer with maximum convenience, economy, and protection of quality. It is a privilege to be a part of these important developments both in the past and in the future by providing those complete coordinated facilities nationally known as The Ohio Boxboard Company's PLANNED PACKAGING, which includes research, development, design, testing, board manufacture, finished production, and special machine adaptation for improved package line efficiency.

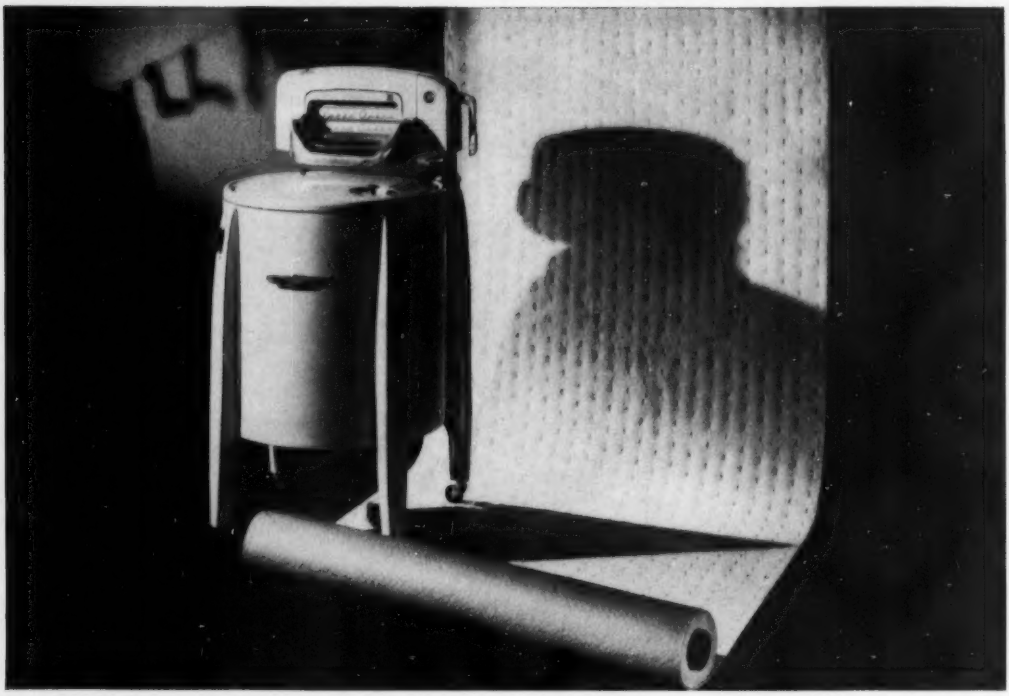
THE OHIO BOXBOARD CO.

"Home of PLANNED PACKAGING"

RITTMAN • OHIO

Manufacturers of paper board, folding boxes, corrugated and fibre shipping containers, and converted specialties

SALES OFFICES: RITTMAN, O. • AKRON, O. • CUYAHOGA FALLS, O. • CLEVELAND, O. • COLUMBUS, O. YOUNGSTOWN, O. • CINCINNATI, O. • TOLEDO, O. • MANSFIELD, O. • CANTON, O. • CAMBRIDGE, O. PITTSBURGH, PA. • ERIE, PA. • NEW YORK, N.Y. • CHICAGO, ILL. • EDWARDSVILLE, ILL.



Custom Protection – prevents shipping damage as no other packaging method known!

How often do *your* products arrive at their destinations scratched, cut or damaged in any way? Once a year – once a month – or oftener? If you had a single instance of damage in transit last year, it may be time to change to *custom protection* with Kimberly-Clark Interior Packaging – KIMPAK®. Companies like the Speed-Queen Corporation who revised and streamlined their packaging operations have found that nothing else protects so efficiently, so economically.

KIMPAK is soft, grit-free, easy to apply as wrapping paper. It will absorb up to 16 times its own weight in moisture within 30 seconds – protect against shock, scratching, pressmarking, vibration. KIMPAK is feather-light, yet gives more protection than most materials of far greater weight and density. Many concerns have found this important in reducing the size and weight of their packages, to offset recent postal rate increases.

Regardless of the product you manufacture, KIMPAK – in its many specifications – can be "tailored" to fit your particular needs. Today – investigate *custom protection* with KIMPAK. For complete information, write to Dept. L-13, Kimberly-Clark Corporation, Neenah, Wisconsin.

KIMPAK INTERIOR PACKAGING

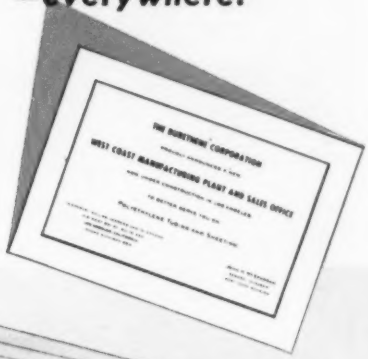
®T. M. REG. U. S. & FOREIGN COUNTRIES

A Product of Kimberly-Clark

Durethene CORPORATION..

POLYETHYLENE FILM

for MODERN Packagers— —everywhere!



OUR CHICAGO FACTORY, *above, turns out thousands of yards of DURETHENE Polyethylene Film and Tubing every day..but demand for this high quality, remarkably uniform Film has become so heavy, and so steady, that we've had to build this new* **WEST COAST PLANT** *to take care of part of the volume. It is equipped to carry out the complete manufacturing operation.*

Give your products "Feel Appeal" with POLYETHYLENE FILM

A package picked up is a package almost sold..and shoppers just can't resist the satiny appeal of Polyethylene Film! It looks good—it *feels* good—and the product it protects gets a super-presentation that's half the battle in making the cash register ring.

Shoppers recognize the reuse value of Polyethylene packaging, too. In bag form or as a wrap, Polyethylene Film offers so many extras that it *demands* consideration. And you'll find more and more fast-selling items—those put out by the most discriminating manufacturers—packaged in DURETHENE Polyethylene Film. Your converter will tell you that he's *surer* of DURETHENE's exceptionally uniform quality—and he finds DURETHENE's big, complete stock (over 150 gauges, widths and colors regularly on hand) a great convenience. He can get seamless tubular Film from DURETHENE, too.

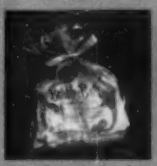
Have you checked on what DURETHENE Polyethylene Film can do for *your* packaging—and selling?

POLYETHYLENE FILM offers endless possibilities for packaging products of all kinds. These applications represent only a few good uses. The same combination of non-cracking protection and customer appeal to eye and hand can help give your products better shelf-life and faster-selling good looks. Tell your supplier, "DURETHENE, please!"

★

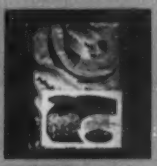
WRITE FOR: *Technical Bulletins • Film Conversion Chart • Bag Conversion Slide Rule • Film Samples •* **"Snap-It-Shut" Bag Closures.**

★

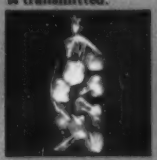


SOAP . . and other bath preparations get fine display, full protection, yet fragrance is transmitted.

CANDY..can be freely displayed at any season, fully protected against moisture and breakage.



TEXTILES..get sales-boosting display without the soilage that means markdowns.



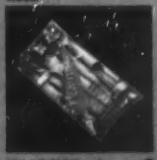
APPLES..can be safely prepackaged, shipped, in Polyethylene bags to build larger unit sales.

LINERS . . let you replace costly steel containers with fibre drums, stop expensive cleaning.

POPCORN . . gets extended shelf-life—moisture vapor resistance retains freshness.

BAKERY ITEMS..in frozen form look better, retain appetizing qualities.

POULTRY . . stays plump and saleable: no moisture loss—no freezer burn—easy brand identification.



PRODUCE..shows off better in Polyethylene bags—gets grower's brand identification.

DURETHENE Corporation

. . . . . Manufacturers of Polyethylene Film for Converters

..1859 S. 55th AVE., CHICAGO 50.. *WEST COAST FACTORY—5600 W. ARBOR VITAE ST., LOS ANGELES 41*

Sales Offices in Principal Cities

RADO PACKAGES

OPEN
AMAZING
NEW
SALES
POSSIBILITIES

RADO PACKAGES* are the sort of things Sales Managers and Marketing Directors dream of but rarely find—practical, radically new, low-cost packages that ideally lend themselves to all-out consumer promotion.

RADO PACKAGES are *all plastic*. They are made automatically and continuously from a wide range of thermoplastic materials, both clear and opaque. The packages are made and filled simultaneously and can be of regular or irregular shape.

Equally suitable for liquids or pastes, RADO PACKAGES can even be produced in the form of unique capless collapsible tubes which have self-sealing apertures.

If you feel your product could benefit from this *new type of packaging* that is novel, practical, low cost and wonderfully responsive to consumer promotion, write to the Main Office of Technopol Laboratories, or to the Packaging Service Station nearest you for additional facts.

*U.S.A. Patent Nos. 2,517,027, 2,530,400
British Patent Nos. 599174, 599183
Patented in 36 other countries. Other patents pending.

TECHNOPOL LABORATORIES LIMITED

Tel: London Wall 9452-9453 • 212 St. John Street, LONDON, E. C. 1, England • Cables, Telabor, London

Packaging Service Stations:

S. AFRICA
UNIVERSAL PLASTIC PACKS (PTY.) LTD.
43/44, Menteith House, Smith Street, DURBAN.

SWITZERLAND
GISIGER & CO.
Office: Claridenhof Dreikonigstrasse 21, ZURICH. Tel: (051) 27.24.47/ 25.00.30.
Factory: Obfelden.

ITALY
GISIGER & PATRIZI S.p.A.
Piazza Santa Felicita 4 Firenze

GERMANY
VERPACKUNGS-TECHNIK G.m.b.H.
Frankfurt/Main

FRANCE
(Algiers, Tunis, Morocco)
S. E. P. (Soc. d'Emballages Plastiques)
Office: 87 Rue Notre-Dame-des-Champs, PARIS 6e. Phone ODEON 71-33.
Factory: 24 Avenue de la Republic, CHATOU, France. Tel: 274.

AUSTRIA
Tupla Gesellschaft, Vienna IV., Wiedner Haupstrasse 8
Telephone: A 34067

BELGIUM
(Holland, Luxemb'g, Belgian Congo)
S. E. P. (Soc. d'Exparsion des Matieres Plastiques)
Office: 41 Rue de la Vallee, GAND. Tel: 594.96.
Factory: 68-7 Rue de l'Agrafe, BRUSSELS. Tel: 22,19,32.

EIRE
TECHNOPOL PACKAGING SERVICES, 81/2 Aungier Street, DUBLIN. Tel. Dublin 53524

No. 7 in a series
THE CLEVELAND CONTAINER COMPANY presents the seventh in a series of informative messages to assist all manufacturers, distributors or sellers of products which require more efficient, economical and attractive packaging.
CLEVELAND
CLEVELAND
CLEVELAND

FUNDAMENTALS OF CONTAINERS IN PACKAGING!

Type No. 7—METAL END TELESCOPE CASE

CONSTRUCTION . . . This case was originally designed as a mailing container and is still used principally for that purpose. Usually the telescope case is of three-piece construction, composed of a full length inner sleeve over which are assembled two outer tubes having metal ends. The average wall of the container is $\frac{1}{8}$ inch thick and is made of high grade chipboard spirally wound. When used for mailing, the case is sealed with an address label at the joint of the two outer tubes. This results in a complete seal which provides against loss of contents during transit. This method of packaging offers a distinct advantage over other containers which may be opened.

VARIATIONS . . . When packaging heavy merchandise for shipping or other purposes, the telescope case is strengthened by increasing the wall thickness and using heavier metal end closures. The metal ends can be furnished in bright tin-plate or decorated with baked enamel. When a waterproof package is required, these cases are available with special protective liners such as foil, or asphalt impregnated kraft. These containers are also made to government specifications for the packaging of spare parts for the services. Containers to government specifications are available for industrial use.

OTHER TYPES . . . Another type of the telescope case is the two-piece construction. It consists of two spirally wound, close fitting tubes with a metal end seamed to one end of each tube. When one tube is fitted over the other, this forms a telescope which permits the packaging of items in varying lengths. The two-piece style container has a decided price advantage over the three-piece construction.

* * *

WHY PAY MORE? FOR THE BEST . . . CALL CLEVELAND!

For the packaging of comparatively long items, this container may be made of a heavy wall tube with short end caps of paper with metal ends. One of the caps is glued in place. The other is assembled loose. This container can be made with an even outer surface of the same diameter for the entire length of the container by using a center sleeve of the same diameter and wall thickness as the end caps.

SIZES AVAILABLE . . . Diameters from $\frac{1}{2}$ inch to $6\frac{1}{2}$ inches and in lengths as desired.

LABELS . . . Decorative or preprinted paper may be spirally wound on the surface of the case for a small additional cost. This container, of course, can be labelled to customer specifications.

USES . . . The Metal End Telescope Case is generally used for mailing or shipping purposes. However, distinctive packaging of small parts, tools, instruments, kitchen utensils and toys as well as storage of maps, charts and blueprints, are a few of the many uses of this type of container.

SHIPPING AND PACKING . . . These cases are carefully packed in standard uniformly high grade corrugated shipping cartons for safe transport and convenient storage in a minimum of space.

* * *

The CLEVELAND CONTAINER Co.
6201 BARBERTON AVE. CLEVELAND 2, OHIO
• All-Fibre Cans • Combination Metal and Paper Cans
• Spirally Wound Tubes and Cores for all Purposes
PLANTS AND SALES OFFICES: Cleveland, Detroit, Chicago, Plymouth, Wisc., Jamesburg, N. J., Ogdensburg, N. Y. • ABRASIVE DIVISION at Cleveland
SALES OFFICES: Grand Central Terminal Bldg., New York City; Washington Gas Light Bldg., Washington, D. C.; West Hartford, Conn.; Rochester, N. Y.
Cleveland Container Canada, Ltd., Prescott, Ontario • Offices in Toronto and Montreal

Write for additional copies of this message.

All business is specialized

. . . and nothing specializes on your business like your business paper

Here's a profit-wise peddler; he picks his corner, not for crowds but for customers. His business is *specialized.* Like yours.

One thing about specializing is the time it saves. Take your business reading. Where else could you find, fast, the vast flood of specific facts, the up-to-the-minute information about new products, materials and methods to keep you posted on your particular field? Much of what you want isn't published *anywhere* else except in this business paper of yours. Its business is to specialize in *your* business . . . to gather, sort out, report and interpret the facts you need.

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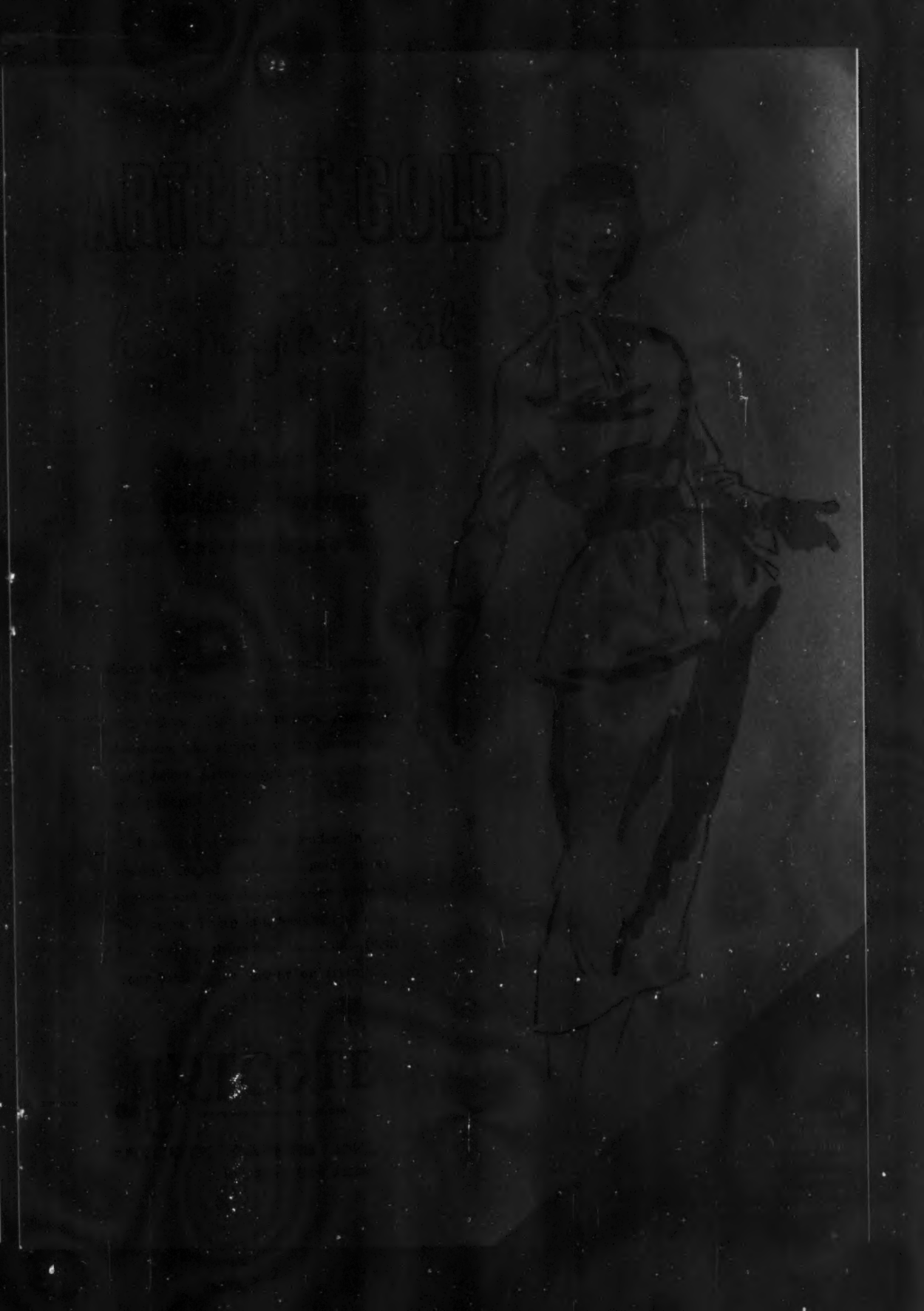

Seasons Greetings

SCANDIA

Manufacturers of Better Packaging Machinery

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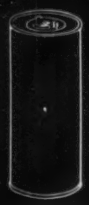
HOW TO KEEP YOUR PRODUCT IN "TOP" SHAPE

R.C.
Metal-End FIBRE CONTAINERS


Dredge Top

Spout Top

Sifter Top

Slip Top

Screw Top

Friction Top

[illegible]

Round, square, oval, oblong—spiral or convolute—designed to your specific needs.

[illegible]

Absolute product protection is a "first" in R. C. packaging. Asphalt-impregnated and paraffin-lined containers are just two examples of R. C. Packaging.

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Fast dependable deliveries, free from material-shortage headaches. Four factories to serve you.

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Always smart-looking, up-to-date . . . yet R. C. Packages cost less to produce, to ship.

R·C· CAN COMPANY

R.C. CAN CO. The Stamp of Quality ST. LOUIS, MO.

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The Inside Story
of
Paper Box Production

Double Check!

MATERIALS destined for Miller boxes must pass *two* stiff inspections. They have to earn their maker's OK, of course, before leaving his place; and they must survive our tests after arriving here. In this way we can be sure they'll do their full duty, as per plan, in the service of Miller customers.

Do your present packages *protect* their contents with a minimum of waste space, weight and shipping cost? Do your present packages *identify* your product as fast and as favorably as possible? If you're not sure, a chat with a Miller representative is in order. The time spent with him will be well spent, whether you and he do business or not. Just clip and mail us the coupon opposite.

WALTER P. MILLER CO., INC.
452 York Avenue, Philadelphia 23, Pa.

We'll be glad to talk packaging with your representative, with the understanding that no obligation is involved. Better have him call up ahead of time for an appointment.

Name.....

Firm Name.....

Address.....Telephone.....

City.....Zone....State.....

Telephone
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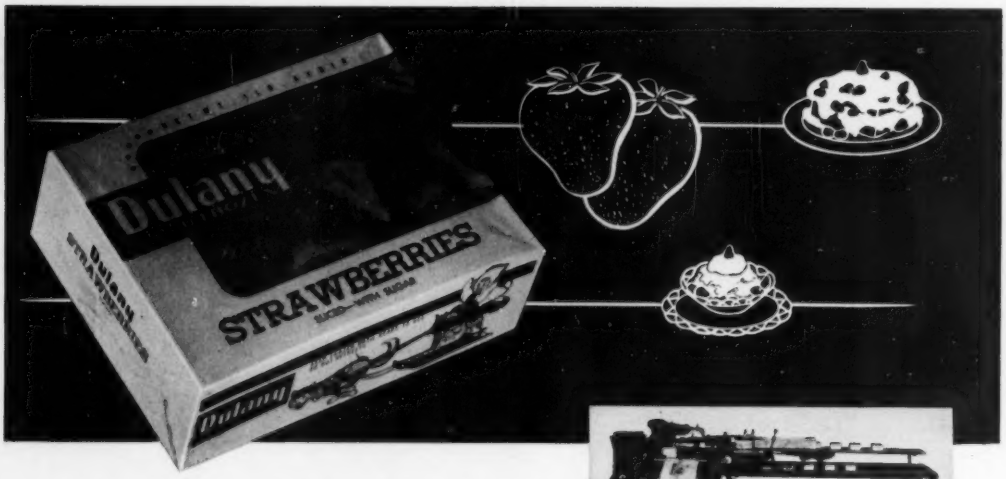
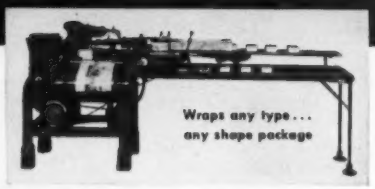
DESIGNERS AND MANUFACTURERS OF SET-UP PAPER BOXES





MILLIONS OF PACKAGES OF FAMOUS-NAME FROZEN FOODS

wrapped on **Hayssen** Automatic **WRAPPING MACHINES**

SAVE HALF YOUR MONEY... Own a Hayssen Automatic Wrapping Machine. Costs far less than you think and occupies about half the usual floor space. Built especially for packers of frozen foods, vegetables, meats, baked goods, fruit, etc. Gives you tighter, more attractive, perfectly uniform packages at lower unit cost. The Hayssen will wrap any size or shape of package... using any type wrapping paper or film. Electric-eye registration for printed wrappers.

IDEAL MACHINE FOR FROZEN FOODS

RUST-PROOFED AGAINST DAMPNESS

It is rust-proofed to protect it in wet, damp packaging rooms of frozen food plants. This Hayssen Wrapping Machine can be operated separately, or tied into your production line, with speed geared to keep the line running steadily and smoothly. Over 42 years' experience gives Hayssen Machines unmatched performance, low first cost, overall economy of operation and maintenance. Many Hayssen units are in use today that were bought over 20 years ago.

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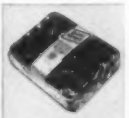
WRITE for further information on Hayssen Wrapping Machines for Frozen Foods. Tell us your wrapping problem... we have the answer.

Hayssen MFG. COMPANY

Dept. MP-1 SHEBOYGAN, WISCONSIN

Since 1910, One of the World's Largest Manufacturers of Wrapping Machines

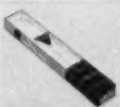
BAKED GOODS


MEATS

TEXTILES

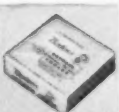
VEGETABLES

FROZEN FOODS


ODD SHAPES

CANDY

ICE CREAM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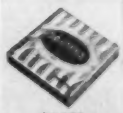
PAPER

$500,000,000 CUSTOMER

Yes, the price we pay for having canine pets is around half a billion dollars a year. That's what we Americans pay for one year's clothing, shelter, training, recreation and medical care for oh, about 22,000,000 dogs. And it's due to be bigger next year; by a touching coincidence, dog and human populations increase together.

Some $200,000,000 of the total bill goes for food especially prepared for pooch consumption, an item of considerable moment to the grocery trade. But even this huge figure is less than it would be without the modern, strong corrugated and fiber board packages that carry the food to market.

In the economical flow of packaged dog food from factory to dog owner, MEAD .009 Chestnut Corrugating Medium and MEAD Kraft Liner play a big part. These basic packaging materials provide the safe and thrifty protection that shippers demand for their products in their bid for consumer favor.

Mead Board is sold direct by

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3347 Madison Road, Cincinnati 9, Ohio

NEWARK 2, N.J.
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LYNCHBURG, VA.

CHICAGO 6, ILL.
205 W. Wacker Drive

MILLIONS OF PACKAG
FAMOUS-NAME FROZEN

wrapp

SAVE HALF YOUR MONEY . . . Own a Haysen
matic Wrapping Machine. Costs far less tha
think and occupies about half the usual floor
Built especially for packers of frozen
vegetables, meats, baked goods, fruit, etc.

IDEAL MACHIN
RUST-PROOF

It is rust-proofed to protect it in wet, damp
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Hayss

Dept. M

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ICE CREAM

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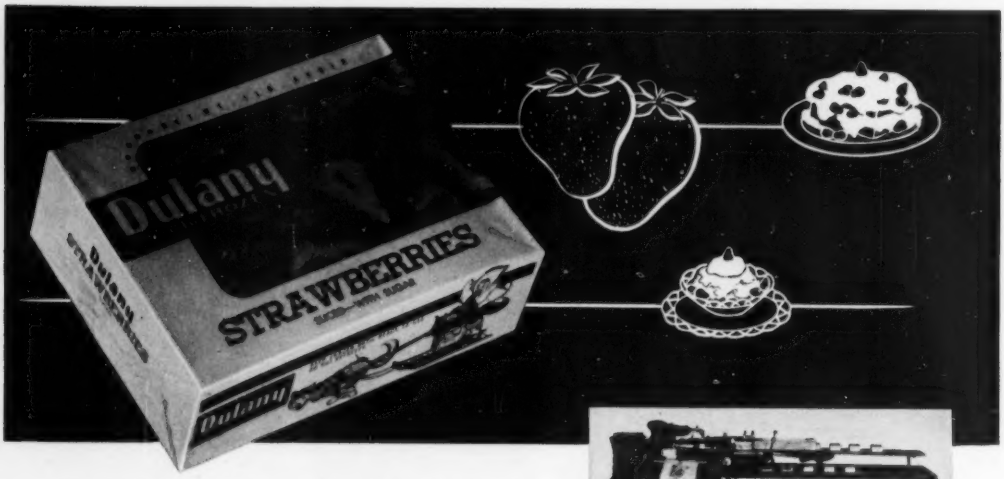

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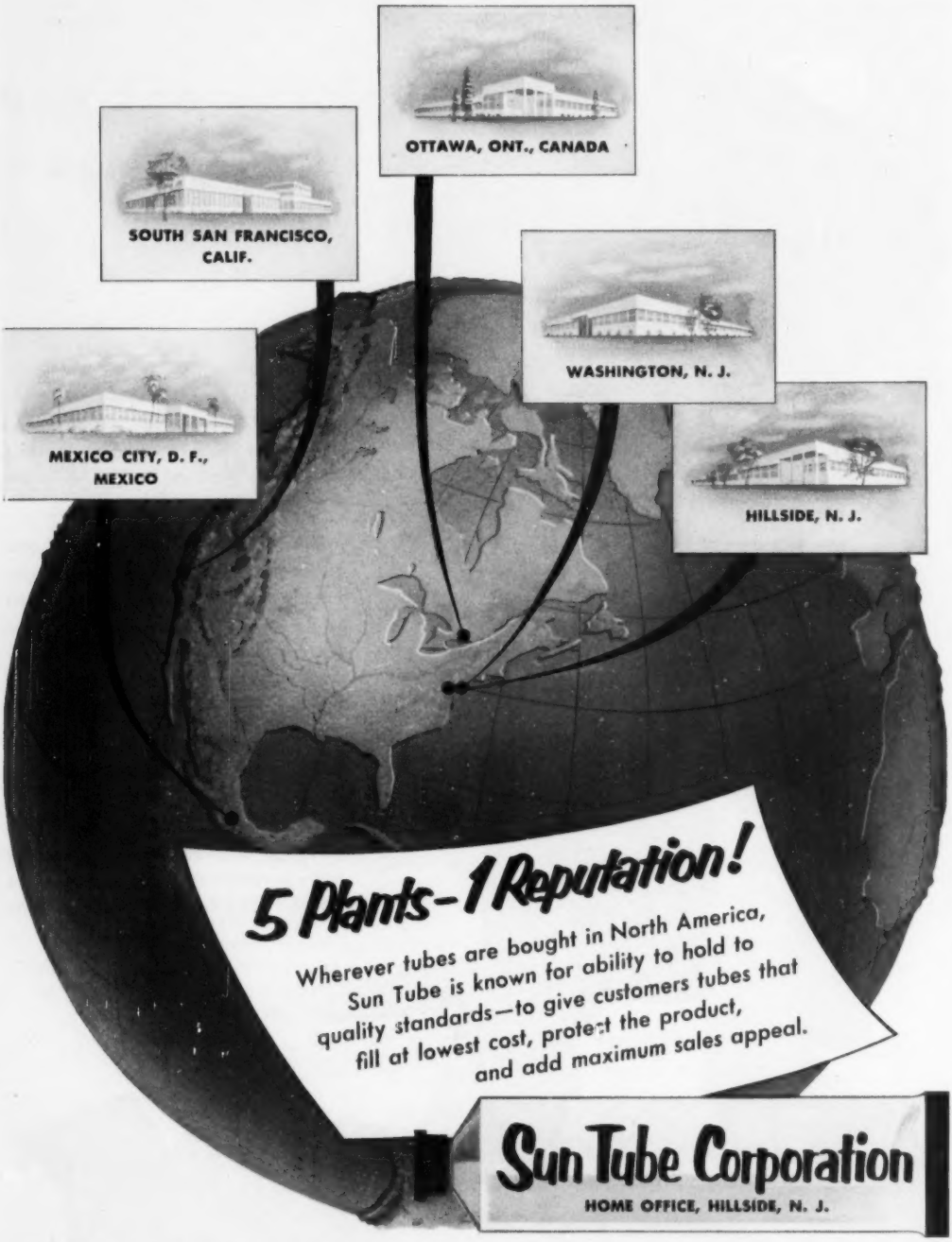
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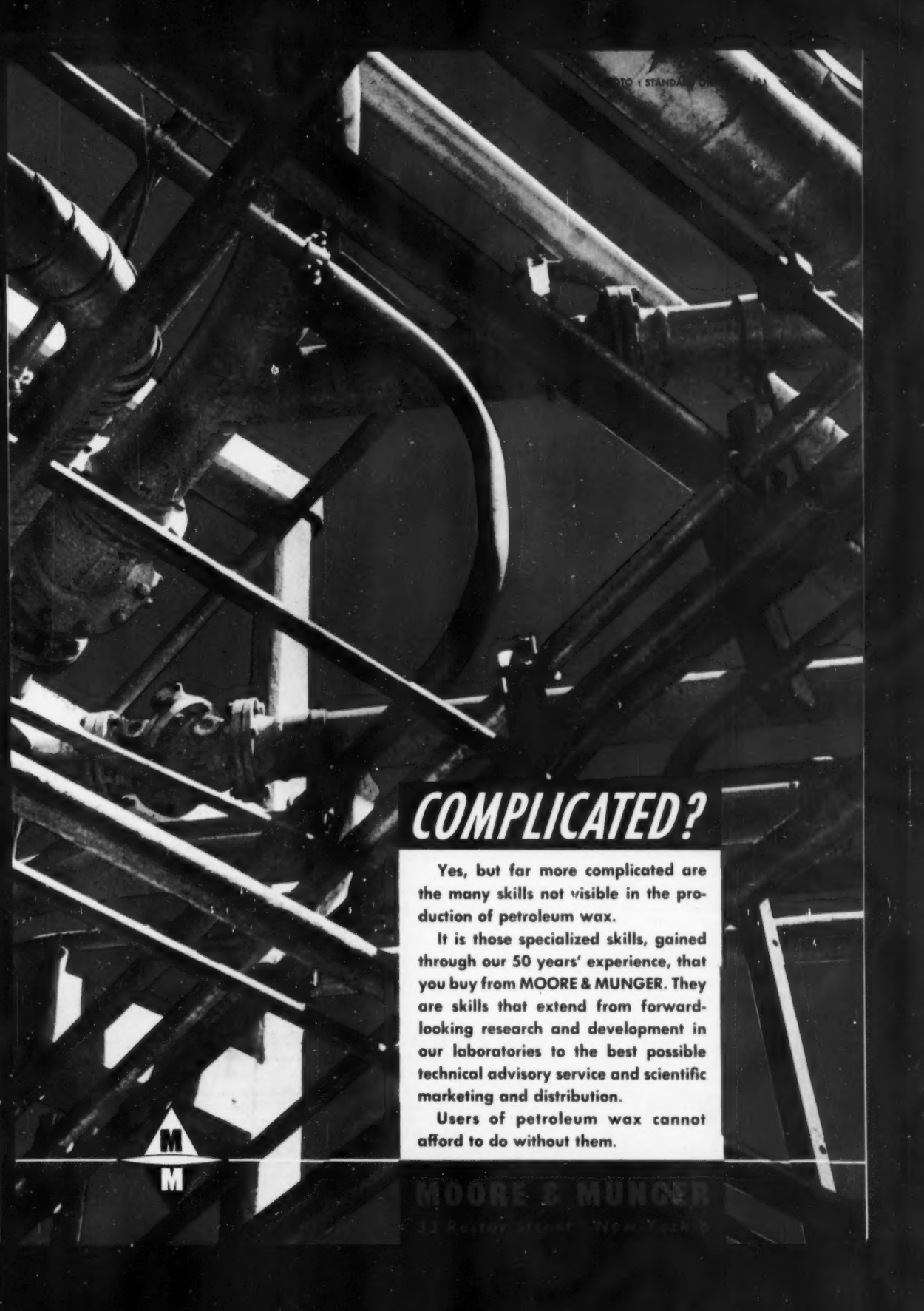
COMPLICATED?
Yes, but far more complicated are the many skills not visible in the production of petroleum wax.
It is those specialized skills, gained through our 50 years' experience, that you buy from MOORE & MUNGER. They are skills that extend from forward-looking research and development in our laboratories to the best possible technical advisory service and scientific marketing and distribution.
Users of petroleum wax cannot afford to do without them.
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Reliable Labeling x 6 Million = results with PERVENAC* Dry Labeling Paper

Here's a different kind of label for you. It can make a big difference in the looks and costs of your package.

Gone are the problems of glue-handling and glue bubbles.

These labels go on bottles at a rate of 300 per minute, instead of the old rate of 120 per minute.

They are printed on PERVENAC, the Nashua dry labeling paper with the built in adhesive that uses *heat* instead of glue to make labels adhere to almost any surface.

If you have a labeling problem, if you would like to eliminate the use of glue, ask for a copy of our book that describes Nashua dry labeling papers and their uses. Or, ask your printer to get the complete story for you. Do it today.

Sharp and Dohme Company, famous pharmaceutical house, annually uses 6 million labels printed on Nashua's PERVENAC. Use of the dry labeling paper has "increased our speeds from 120 to 300 units per minute . . . eliminated glue bubbles." The company is now planning 100% use of PERVENAC dry labeling.

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Every Service in Flexible Packaging that Sells

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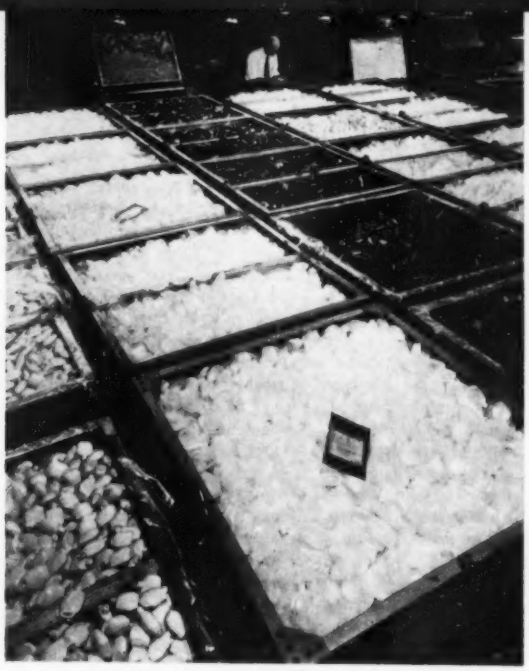
VOLUME 26
NUMBER 5
JANUARY 1953

Modern packaging



PHOTO, PLAX CORP.

SQUEEZE-BOTTLE BOOM goes on. Some 130 million polyethylene bottles were molded in 1952, taking about 2,000 products to market. Will 1953's free market produce another packaging star like this one?

REVIEW and PREVIEW

With materials no longer a problem, 1952 was an exciting year in package development—and 1953 seems to offer opportunity unlimited

This is a strangely easy time in packaging. While the nation fights the fourth most costly war in its history and even-more-ominous clouds loom on the international scene, our domestic economy has been so expanded and so well adjusted that there is at this year-end—for the first time in 11 years—no real problem about the supply of any important packaging material.

The situation can change at any moment. But for the present packagers are concerned not so much with *how much* they can get as with *what* they should get. Which of the new developments in materials, in packages, in machinery can be turned to advantage in the competitive and cost-conscious 1953 market? Where are the straws in the wind that point the way to packaging supremacy? What curiosity of today—like the plastic bottle in 1945—may be a star to hitch to?

To help answer those questions, this article will forego the usual year-end statistics and, instead, review some of the developments of 1952 that look like trend-pointers for 1953. Throughout this article, parenthetical references will identify previous articles in MODERN PACKAGING from which additional details can be obtained.

There are always special premiums for those who can adapt advances from some other product field into their own. The opportunity for doing this will always be challenging, for packaging shows little respect for product barriers. A method of banding cigars may be successfully adapted for tooth-brush tubes. A package now being pioneered for one product may write the success story for a dozen or so quite unrelated products some months ahead, or carry a product into outlets where it has not previously had significant distribution.

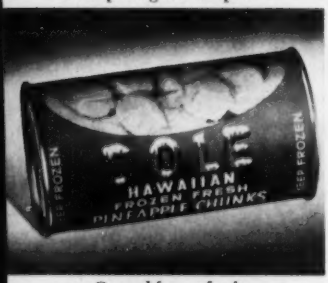
The current surge in packaging development has a sober and realistic aspect. The achievements are not those of a period of luxury; indeed

These new ideas made the headlines in 1952:

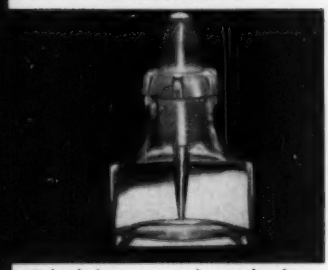
Unit-packaged small parts

Foil pan-package

Self-stick displays of vinyl plastisol



Canned frozen food



Polyethylene stopper shows ink color

PHOTO, YASKING CORP.

Frozen juice in laminated bag

Acetate formed over carded items

there has been a growing awareness of costs and much of the progress has been in the direction of giving greater value to the consumer. Turned in this direction, the ingenuity of packagers is wonderful to see.

Polyethylene to the fore

Outstanding in 1952 packaging developments was polyethylene, already the workhorse in some product lines and ready to take on similar status in others. The material, whether in film or molded form, is compatible with almost any product, while flexibility and strength suit it for application in a wide range of package forms or components.

Significant new polyethylene packages that appeared last year ranged from bantam-sized squirt tubes to 15-gal. carboys.

A miniature collapsible tube with an applicator tip integrally molded was adopted for Aziza eye drops (*July, 1952, p. 107*); it next turned up as a container for diagnostic units of radioactive iodine, used by Tracerlab, Inc., of Boston. The Tracerlab tubes are approximately 2⅜ in. long and have a capacity of ⅛ oz. The convenience and performance of these packages point up the potentials of the squeeze tube—as distinguished from the squeeze bottle—for other products where dispensing of the product and measured quantity are important factors.

A squeeze tube which in size and shape simulates a metal collapsible tube has been adopted by Sue Ann Food Products Corp., Chicago, for cheese spreads (*Sept., 1952, p. 201*) and by Ries Finer Food Div. for Reese Sardine Spread. The entry of this polyethylene tube into food products and its apparent ready acceptance by consumers, is worth noting, because the metal tube has never found the acceptance in this country for foods that it enjoys in Europe.

The squeeze tube logically extends the advantages of the squeeze bottle, which has enjoyed enormous growth in recent years because it is nonbreakable and because it lends itself so well to a wide range of dispensing functions. A prime example is Sharp & Dohme's new Mijit atomizer, which is so ingeniously designed that it can be used to produce either a spray or drops; packaged with each unit of Aramine intranasal decongestant, it is expected to make this new product one of the company's biggest-volume items.

All in all, there are said to be nearly 2,000 products in squeeze bottles today, whereas there were only 400 three years ago. In 1952 an estimated 130-million bottles were produced and that figure may go to 200 million this year.

Another significant new application of polyethylene is its use by the Higgins Ink Co. to provide a color-identifying dropper-stopper (*Oct., 1952, p. 92*). The translucent polyethylene stopper is steeple shaped and air pressure inside the bottle drives some ink up into the stopper when the stopper is inserted in the bottle. Since Higgins manufactures 19 colors of ink, the translucent stopper very simply affords the identification that otherwise would require a large inventory in color-coded stoppers.

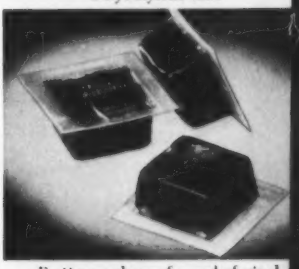
In the industrial field, last year saw the introduction of the 6½-gal. and 13-gal. polyethylene carboy bottles, especially well suited to handling hydrofluoric acid, which attacks glass (*May, 1952, p. 92*). But this con-

Interlocking can

Silicone-treated drain-free bottle

Sundae in a bag

Polyethylene tube



Portion packages formed of vinyl

Pickles in brine: 2-ply Pliofilm

Fluorescent colors

Decals applied by a labeler

tainer also has the great advantage that it is non-breakable and reduces weight. Within the past few months, a box-shaped 15-gal. polyethylene carboy has been placed on the market (*this issue, p. 113*) and offers interesting possibilities because of its space-saving shape. Smaller sizes of the box-shaped carboy are expected to be available in the near future. To all packagers, the production of polyethylene containers of such size is significant. In both cases—the blown 13-gal. bottle and the square carboy injection molded in two halves—the pieces are the largest ever produced of polyethylene by their respective molding methods.

Advances in metals

Easing of restrictions on the use of tinplate and other metals brought out some interesting new ideas in metal containers last year and also gave great impetus to trends already under way—notably, the swing to aerosols and the adoption of the can as a standard package for frozen fruits and some vegetables.

The growth of the metal aerosol (*Dec., 1952, p. 91*) is both big and important news. It is now estimated that well over 60 million aerosols for non-food products and about 100 million for whipped-cream products alone were produced last year. Hottest item in the field is the aerosol shave, which this year may become the largest single user of aerosol cans. Aerosol paints and touch-up sprays came into greater prominence last year, due to the solution of certain problems, and are expected to hit a boom stage in the near future.

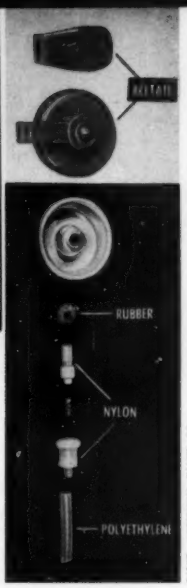
Behind the scenes in the great aerosol push, manufacturers of valves, propellants and containers have been carrying on incessant research—frequently at emergency pace—to meet the performance requirements that new aerosol-packaged products demand or may demand in the near future. Improved formulations, valve constructions and loading methods are breaking through the road blocks that have delayed success in many new product fields.

Both the can industry and the frozen-food packers are excited over their discovery during 1952 that the consumer will now accept and identify frozen fruits and vegetables packaged in cans (*Nov., 1952, p. 85*). The can, of course, in addition to being an excellent protective package, offers certain advantages to packers, particularly those who now pack processed as well as frozen foods. Although lithographed cans are said to be slightly higher in unit cost than conventional frozen-foods packages, they offer economies in other directions, especially where the immersion-freezing process can be used.

Starting with strawberries—30-million pounds of which were packed in retail-sized cans last year—the can has spread in the frozen-foods field to cherries, peaches, pineapple and a few vegetables. Can makers are predicting an almost universal switch to metal by fruit freezers this year. The trend will bear watching for its possible effect on the over-all supply of cans for other purposes, particularly should there be a sudden pinch on tin or steel supplies this year.

A time saver to food processors and a convenience to the housewife is the new "pan package" of semi-rigid aluminum foil which has won such rapid acceptance for frozen pies, baked goods and other pre-cooked frozen foods. It not only serves as

AEROSOLS have progressed from a novelty to a staple package now used in some 30 product fields. These were judged best in sales appeal in last month's competition of Chemical Specialties Mfrs. Assn. First-award winners are in front row; honorable mentions in rear.



VALVE, PRECISION VALVE CO.

IMPROVED VALVES extend aerosols' usefulness, are tailored with combinations of materials to suit product. This one is for foam products.

baking pan in the food processor's plant, but as the package to get the product to the consumer and, sometimes, as the baking or re-heating pan in the home. In many cases, such containers can go right to the dining-room table for use as casseroles. *(March, 1952, p. 236).*

Several other developments in the field of metal containers deserve notice. The Griffin Mfg. Co. adopted a shoe can that nests one can on top of another so that it permits non-tip stacking on counters and shelves *(Feb., 1952, p. 100).* The performance principle involved – that of accommodating retailers' problems–applies to many packages beside the can. Improvements of this kind will pay off just as well this year–perhaps better, because today's fast-selling pace places a heavy penalty on "awkward" packages.

The Griffin can also sets very high standards in the quality of its lithography, providing excellent color identification and increasing package sales power. Excellent lithography on metal containers from the smallest sizes up to and including 55-gal. drums offers the packager unlimited opportunity this year to decorate metal containers for maximum effectiveness.

The first large four-color-processed lithographed drum appeared last year, used by Rohm & Haas *(Aug., 1952, p. 109).* Collapsible tubes with colored shoulders, introduced last year, offer a chance for more decorative designs *(Modern Packaging Encyclopedia, 1953, p. 253).*

Flexible packages

Finding new favor and subject to unusually brisk activity are the packages formed from transparent films and various laminations. The factors spurring this activity are numerous: the continued development of automatic machinery for handling films; the convertibility of cellophane, acetate, Pliofilm, polyethylene and saran; the practicability of heat-seal closures, excellent light-weight protection; visibility and, perhaps most important, convenience and appeal for the consumer.

The flexible package is ideally suited to one of the major trends in packaged-goods merchandising–the saving of time and work for both retailer and consumer. It lends itself to small-quantity put-ups, thus making it easier for shoppers with small families and cramped budgets to squeeze in appealing snacks and treats in greater variety at less penalty in cost. With cellophane now more readily available than ever, it can be safely predicted that the flexible container, a major medium in measured-quantity and small-unit packaging, will reach new heights this year. This conclusion is affirmed by the advances in convenience demonstrated by some of last year's more important developments.

The popularity of liquid-holding flexible packages has moved steadily forward, paced by volume production of such pouch-packaged items as pickles, herring and sauerkraut *(March, 1952, p. 196).* Last year saw further extension of the methods and materials involved. One of the most famous names in pickles, after years of experimentation, will shortly announce a pouch package that is also vacuumized.

F & F Laboratories, Inc., introduced a line of sundae toppings in laminated polyethylene-cellophane bags *(Jan., 1952, p. 102).* Suffolk Farms Packing Co., pre-packagers of fresh produce, developed the very interesting idea *(Feb., 1952, p. 86)* of inserting a "hitch-hike" envelope of monosodium glutamate seasoning in bags of spinach and an envelope of French dressing in a bag of salad greens.

Pasco packs of frozen orange-juice concentrate in bags were big news for the drug-store and restaurant trade. *(Sept., 1952, p. 110).* The time-saving convenience of this laminated cellophane-polyethylene single-service package, developed for Walgreen Drug Stores, promises to revolutionize packaging in this particular field.

Cellophane can be expected to register new advances in the steady growth of meat and produce prepackaging and the booming trend to textile packaging.

DuPont has announced the freer availability of K-202 (saran-coated cellophane) which previously, due to shortages, was largely restricted to the California Prune & Apricot Growers Assn., which pioneered its use on Sunsweet prunes *(April, 1951, p. 122).*

A new polyester film, Mylar, of potential importance to packaging, made its appearance last year. Its unusual clarity, strength and exceptionally high ratings in most packaging properties created something more than a ripple of excitement. It is, however, still in the pilot-plant stage and availability as well as problems in machine handling and sealing will delay its commercial appearance.

Plastic-coated papers offer increasingly bright prospects for packagers. Methods of producing them have steadily advanced toward lower costs and higher performance. Polyethylene and certain types of saran and vinyl copolymers coated on paper lead in packaging significance. Polyethylene-coated paper, because of low cost, excellent water and water-vapor resistance, chemical resistance, tempera-

ture-range flexibility and heat-sealing properties, has become a very important material in the manufacture of inner plies for multiwall bags. It is being used in volume quantity to meet the requirements of military waterproof bag specification JAN-P-117, Grade A, Class C, as well as for commercial packaging of metal parts in small, flat, heat-sealed bags.

Polyethylene-coated papers are finding expanding use as liners for drums and other rigid containers. Polyethylene's releasing properties and its resistance to damage in creasing and folding have made it popular as a locker wrap. For dehydrated concentrates and other very hygroscopic products, the combination of aluminum foil, paper and polyethylene is proving increasingly popular.

Broader avenues for merchandising ready-mix foods have been opened up by improved flexible-packaging combinations which permit the packaging of various food ingredients in separate envelopes within the same carton, yet give specific protective requirements to each of the components. The "ready-to-make" idea of packaging has also moved out of the kitchen for such new packaged items as ready-to-sew dresses in transparent bags, including pre-cut fabric and all the accessories for making a smart dress in a few hours.

Progress has been made in the use of miscible bags. These are packages made of a film which dissolves, along with premeasured contents, when thrown in a beater or mix. Films soluble in water such as those made of polyvinyl alcohol, methyl and several other cellulose derivatives may have a future for packaging premeasured quantities of soap powders and other household chemicals.

Vinyls finding a place

Increased packaging attention to vinyls was a noteworthy development during 1952 *(Feb., 1952, p. 79)*. Vinyls are still most frequently used in packaging as coating or laminating materials, but there are new possibilities for films using non-toxic and non-odorous plasticizers and there are several interesting applications for containers drawn from vinyl sheet.

Vinyl-coated end stock is used in the German "Eco" carton now being introduced in this country. This sift-proof, completely heat-sealed carton featuring a recessed end construction is successfully used in Europe for packaging soap and other powdered products, as well as jams and frozen foods. First installations in this country are expected to be made this year.

Electronic sealing and vacuum forming have spurred the development of containers made of vinyl as well as other plastic sheet. Design possibilities have been freed of former restrictions with cost kept in line.

Last year, the drawn vinyl container for individual portions of jam and jelly appeared *(April, 1952, p. 90)*. Exclusive rights to the use of this particular container are held by The Kraft Foods Co. Special machinery forms, fills and seals 200 to 300 of the Kraft "Portion Control" containers a minute. Such potentials cannot fail to be intriguing if and where practical for other types of packaging.

An interesting package that will make its debut in 1953 employs a shaped vinyl sheet that permits the package to perform a brand new service for food products that lend themselves to molded shapes.

New high-speed production of formed transparent acetate pieces that can be affixed to cards offers a very convenient and efficient new method of packaging hard-to-manage carded items such as buttons, notions, small hardware, jewelry, silver flatware, etc. *(March, 1952, p. 200)*.

Decoration and display

The year 1952 will be remembered as the one in which daylight-fluorescent printing inks, whatever their future may be, reached over from the display field to the package itself. The

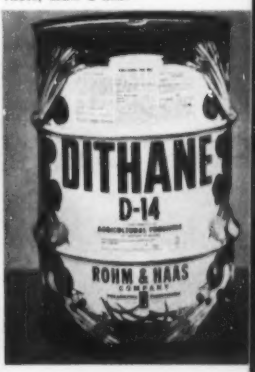
New contenders in the shipping-container field

BLOWN POLYETHYLENE bottles as big as 13 gal. for acid save weight, shipping costs.

FOIL-PLY FIBRE DRUMS package oils and greases. This is six-ply foil and kraft.

PHOTO, ROHM & HAAS

PRIZE-WINNER for Anaconda magnet wire is form-fitting molded pulp reinforced with sisal and phenolic resin.



EYE-APPEALING 30-gal. steel drum full-color printed.

availability of fluorescent gravure inks opens the possibility of high-speed package printing with these super-bright colors, although silk-screen and bronzing processes are of major importance now. Examples are found in cartons, labels, wrappers and sleeves *(June, 1952, p. 87)*.

Glass packagers now have available a new means of labeling and decoration, through the pioneering by Associated Brands, Inc., on its Kidmetics line, of an automatically applied decal-comania which can be handled in the packaging plant about as readily as a paper label on a converted paper-labeling machine *(Dec., 1952, p. 101)*. Special techniques in the manufacture of the paper-backed decal produce a transfer, in as many colors as desired, which is said to be about as well anchored as fired-on ceramic decoration.

In the display field an intriguing new item is the self-adhering point-of-purchase display sign made of cast polyvinyl chloride sheeting, which by molecular attraction of one flat surface for another will adhere to glass or any non-porous, glossy surface without a moistening agent or adhesive *(March, 1952, p. 212)*. These colorful stickers, used similarly to decals, will remain permanently or may readily be stripped off and replaced without leaving a mark—which makes them very attractive to retailers. During 1952 they won their way into thousands of retail stores to advertise cigarettes, foods, household cleaners, cosmetics and dozens of other items. They now have a low-cost competitor in a printed sheet of acetate film which merely has pressure-sensitive adhesive applied along its edges.

Notable changes have been taking place in design techniques to meet the requirements of supermarket selling. There is a trend to more flexible formats for cartons to permit the use of topical themes that will attract the shopper, such as get-out-the-vote cartons used during the pre-election months for Kellogg cereals *(Oct., 1952, p. 85)*. These changes require careful control of package inventories and closer cooperation between purchasing, production and advertising departments.

Glass aerosols

It is important to note that the first successful glass aerosol—the Larvex Finger-tip Spray—is now on the market *(this issue, p. 90)*, opening the field to many products that because of corrosion could not use the conventional metal container. The glass container, of course, is ideally suited for metal-corrosive liquids, but the additional aerosol requirement of safe performance when handling pressure had been a stumbling block. The new glass aerosol surmounts the problem with an outer fibreboard canister. A similar solution, now under development, involves a glass-lined plastic container. With the promising beginnings that have been made, the future of glass aerosols seems assured.

The Larvex glass aerosol also pioneers a new principle of low-pressure operation that should have far-reaching implications for many products that until now have not been able to meet satisfactory formulation requirements. Included are products that could not be mixed with the propellant (necessary in conventional operation) and those where discharge of the propellant with the active ingredient might not be desirable. Another innovation, the Larvex all-plastic valve, is especially significant because of the advance it represents in overcoming the corrosion problem.

Drug innovations

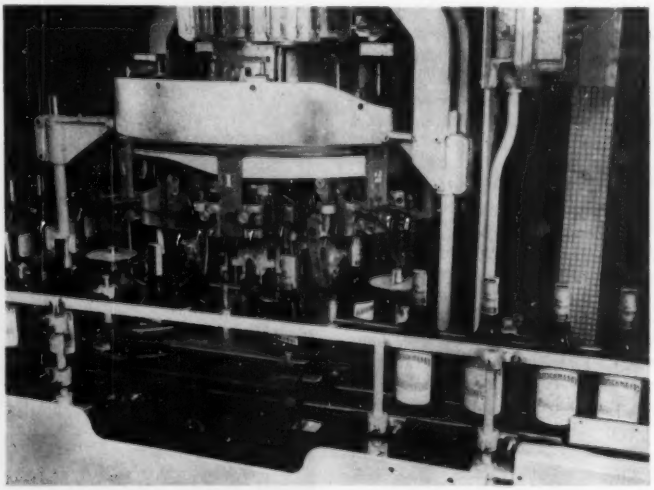
The drug and pharmaceutical field has been, as always, a particularly fertile source of new developments—many of them specialized to this field, others full of idea value for other fields.

Many glass containers are now being treated on the inside with silicone solutions to produce a drain-free surface *(May, 1952, p. 138)*. Such treatment helps speed the mixing of prescriptions and assures total dispensing where measured quantity may be critical.

Desiccants are being used in various forms—in capsules, plugs or closure fittings—to preserve low humidity in small unit packages for moisture-critical drugs such as the antibiotics *(June, 1952, p. 144)*.

A roll-labeling operation adopted by

PHOTO, AMERICAN MACHINE & FOUNDRY CO.



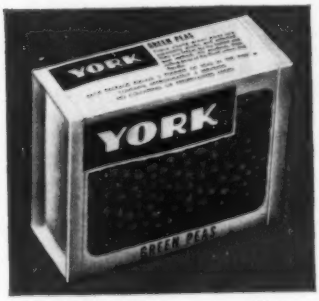
AUTOMATIC APPLICATION of cellulose closure seals is now available after many years of experimentation. The machine illustrated above, now in use by the Fleischmann Distilling Corp., is said to be the first successful model made.

'ATOMIC COCKTAIL,' radioactive iodine for diagnostic purposes, is packaged by Tracerlab, Inc., in tiniest polyethylene squeeze tube—new possibility for packaging single-use quantities of many liquid products.

PHOTO, PLAX CORP.

DESIGN TREND worth noting is toward flexible format which permits quick change for topical features such as this "vote" appeal on Kellogg's Corn Flakes during election.

HEAT-SEALED CARTON, a German development, will make its debut in this country in 1953. Formed from flat blanks, filled and sealed on high-speed equipment, it is widely used abroad for frozen foods and products requiring siftproofness and low water-vapor transmission rates.



PHOTO, ALFRED HOFFMAN & CO.

a drug packager is an important innovation. The airtight system of checks and controls necessary to prevent incorrect labeling of drugs and pharmaceuticals has always been a costly proposition. The packager anticipates that annual savings of $50,000 will result from its switch to thermoplastic roll labeling. The machine used is fed from a roll of 3,000 labels. A coding device applies a finishing or control number. The labels are finally cut off by a bar and then rest momentarily on two metal arms which heat them to the point where they will adhere to the container. Adjustments can be made to accommodate numerous container shapes and sizes.

New self-contained, single-dose, throw-away syringes that serve both as the package and injection device may eventually replace the old-fashioned type of hypodermic assembly for parenteral therapy *(this issue, p. 108)*. Growing acceptance of this type of time-saving and convenient packaging has been brought about by the rapid development of injectable medicines during the past decade and the experimental work on the part of large drug houses in perfecting such precision-engineered packages, using many of the new packaging materials including plastics and synthetic rubber.

There is a renewed interest in the molded-pulp container. Strengthened with sisal fibre and phenolic resin, a molded-pulp container was developed by Anaconda Wire & Cable Co. to cradle shipments of delicate but heavy magnet wire *(July, 1952, p. 104)*. Molded in two halves which nest in storage, it is form fitting, light weight and so durable it can be used for many repeat trips. The Anaconda container won a first award in the recent industrial packaging competition and has attracted so much favorable attention that additional applications of molded pulp in various forms are certain to be seen in 1953.

A new foil-kraft drum, designed to serve as a single-trip container for oil, grease and other products that have traditionally demanded steel drums or pails, combines protective function with excellent potential for economy *(Jan., 1952, p. 105)*. The body of the drum is convolute wound of multiple plies of prelaminated material. The only steel required is that used for tops and bottoms. Impressive savings in weight make for easier handling and lower shipping costs.

The glued-lap corrugated shipping container reached a considerable degree of acceptance last year *(March, 1952, p. 244)*. This type of manufacturers joint is said to offer economy along with excellent performance, especially for smaller-sized containers.

The trend that began some time ago toward paperboard shipping containers of ever-increasing size and carrying weight has been accelerated by the railroads addition of Section 8 (k) to Rule 41 of the Consolidated Freight Classification. This permits gross weights up to 300 lbs. in three- and five-piece boxes so constructed that the container has two thicknesses at all score lines.

Potentials for savings in materials and manhours, plus reduction in shipping weights, are demonstrated in the all-corrugated unit load, palletized on corrugated pallets *(April, 1951, p. 176)*. Such unit loads may gross a ton or more, are designed for handling by power trucks and are commonly known as "power packs." This type of shipment is definitely on the increase. Whereas an estimated 300,000 power packs were used in 1950, probably more than twice that quantity were used last year.

General Motors' large-scale experience with vapor-corrosion inhibitors *(Dec., 1952, p. 114)*, along with the successful results reported by many other users and incorporation of the method in military specifications, certainly means that VCI will become widely used as an efficient, practical means of packaging metal products for protection against corrosion.

A small revolution is brewing in the *(This article continued on page 188)*

The first glass

Sheathed bottle with all-plastic valve introduces a three-phase, low pressure method suitable for aqueous products

THE COMPLETE PACKAGE pioneers a brand new three-phase principle of operation. It is especially designed for an aqueous-base product and is said to use the lowest pressure of any aerosol-type package. Perforations in the metal end of the canister act as safety valves in the event of breakage of the glass.

Packaging history will probably be made by the new pressure package for Larvex mothproofing spray. It introduces an entirely new, three-phase principle of ultra-low-pressure operation; employs an all-plastic, corrosion-free valve and is trail-blazing the first commercial use of a glass container for a pressure-propelled aqueous-type product.

Developed in seeming conflict with hitherto accepted working principles for aerosols,* the new Larvex "Finger-Tip Spray" opens up new opportunities for many products both because of its principle of operation and also because it brings glass into the picture for those products that find metal containers and present can-lining materials inadequate for their particular requirements.

Numerous problems were encountered and overcome by Zonite Products Corp., New York, manufacturers of Larvex, and cooperating suppliers and engineers during the more than three years of research needed to produce the package, which Zonite insisted must be completely practical in terms of packaging operation and safety.

The new pressure package consists of a 16-oz. Boston round glass bottle with a special beer-bottle finish. The all-plastic valve is mounted in a crown cap. The bottle itself is sheathed in a convolute-wound fibreboard safety canister that has crimped-on metal ends.

The propellant is a dichlorotetrafluoroethane type of Freon which provided the necessary low vapor pressure and solved other problems peculiar to this product and package. Although this type of propellant has previously been used in combination with the conventional Freon-12 in pressure packs for certain foam products, this is the first time that it has been used alone in an aerosol. The Larvex package operates at the extremely low pressure of 15 p.s.i. (at room temperature) and the ratio of propellant to active ingredient is reportedly lower than that of any other pressure package now on the market.

The Larvex pressure package is radically different from other pressure packages in that the propellant is not discharged with the active ingredient. In conventional aerosols, the propellant travels with the product when spray action occurs because the propellant and the active ingredient are combined and form one of the two elements essential to aerosol function. The second element is the gas that fills the headspace of the container and exerts pressure, causing the mixture of propellant and active ingredient to be discharged through the valve when it is opened. Aerosols that employ this principle of operation are of three types: those in which the active ingredient is miscible with the propellant (insecticides, space deodorants); those in which the product is held in suspension (paints, waxes); and those in which the propellant is emulsified with the active ingredient (shampoos, shaving cream).

Since Larvex is an aqueous solution in which the usual liquefied gas-type propellants are comparatively insoluble, the first two types of systems would not work. It was possible to emulsify a liquefied-gas propellant in Larvex, but a rather large quantity of propellant was needed to empty the container completely. Therefore, in order to solve the obstacles that stood between Larvex and a satisfactory pressure package, it was necessary to invent a fourth method of operation—one in which the product and propellant could be kept in separate phases. This was achieved, and patents on the method have been filed.

Research and development

The result is an outstanding example of teamwork in package development. The Zonite company outlined the problem in general terms and turned it over to a leading research and development institution. On the basis of the research report, the new three-phase principle of operation was adopted. The all-plastic valve was designed and its molding prob-

* See "Boom in Aerosols," MODERN PACKAGING, Dec. 1952, p. 91.

lem solved by a molder with long experience in pump-spray package fittings. Finally, a leading container company worked out the metal-end fibre jacket which made the package commercially acceptable. Zonite coordinated the entire program and worked out many of the details of the container and the filling method.

In the early stages of the development program, it was found that a satisfactory spray could be obtained through an atomizing nozzle if a small quantity of propellant were added to Larvex and allowed to remain as a separate liquid phase in the bottom of the container. About 4% by weight of propellant was found sufficient to expel the Larvex contents completely. The propellant, having greater density than the Larvex, remains at the bottom of the container. The Larvex "floats" on top of the propellant and occupies the middle region of the container. The headspace is filled with gas that has evaporated from the propellant and passed up through the Larvex. Thus the pressure package is a novel three-phase system, involving three separate elements—propellant, active ingredient and gas. Theoretically, no propellant is lost when this type of package is operated, although actually a minute quantity may mix with and be expelled with the Larvex. The three-phase principle has great merit where products immiscible with the propellant are concerned. The conventional two-phase aerosol, of course, is still the answer for products that can be successfully mixed with the propellant.

The propellants used initially in the investigation of metal containers gave equilibrium pressures of 30-35 p.s.i. at room temperatures. While these propellants are quite safe for use in metal cans, even much lower concentrations are sufficient to cause rather violent shattering of a 12- or 16-oz. unprotected glass container when accidentally broken. Following considerable research, it was found possible to establish the ratio of propellant to Larvex at slightly less than 4½% by weight, a pressure of approxi-

EASE AND EFFECTIVENESS are the main advantages of the new Larvex package, which incorporates many aerosol *firsts*. Quick and thorough, the finger-tip spray leaves one hand free to turn the garment and open lapels or cuffs.

COMPONENTS OF PACKAGE, assuring an inert container surface and overall protection, include the plastic valve assembly, a crown cap, crimped-on metal ends, a corrugated-paper baffle and fibreboard canister. The canister is designed to make pressurized bottle completely safe in handling and use and also to provide an effective labeling surface. Baffle prevents escape of fragments if glass breaks. The all-plastic valve and assembly mounted in crown cap (right) eliminate problem of corrosion. Spray assembly consists of molded styrene spray release, valve chamber, vinyl spray nozzle, Neoprene gasket, polyethylene tube.

COMPLETE SALES STORY is told by this compact counter card and package display combination. The panel for "New! Quick, Easy Finger-tip Spray" notice is silk screened in orange fluorescent ink.

mately 15 p.s.i. at room temperature. This pressure, it was discovered, would be practical in a protected glass container and would assure complete discharge of the Larvex.

In order for this small quantity of low-pressure propellant to be effective, however, it was necessary to overcome a major problem. A means had to be found for maintaining the equilibrium pressure of the propellants throughout the spraying period. This was accomplished by the addition of certain inert materials. The patents pending cover this principle.

The pressure within the container, established during the loading operation at 15 p.s.i. is self-regulating from this point on. With any decreases in contents caused by discharge of the Larvex, further evaporation of the propellant takes place and the gas that boils off bubbles up through the active ingredient to restore the pressure maintained by the gas in the headspace of the container. In other words, the pressure of gas in the container controls the rate of evaporation of the liquid propellant and the amount of evaporation determines the quantity of gas or pressure.

Temperature changes are also a factor, since the pressure decreases below room temperature and rises at higher temperatures, but this does not interfere with operation of the package when it is used at intended normal temperature or at higher-than-normal temperature.

The correct functioning of the Larvex pressure package at this point becomes entirely dependent on the design and construction of the dip tube, valve and nozzle. The dip tube, which is made of polyethylene, is so designed that the bottom end extends into the Larvex solution and thus permits discharge of the Larvex —and only Larvex. None of the propellant, either liquid or gas, escapes from the package as long as the Larvex remains to bar access of the propellant, liquid or gas to the dip tube. When all Larvex has been expelled from the container, the original charge of propellant remains.

To prevent undesired discharge of the propellant, it is essential that the length of the dip tube be precise. It was necessary to select a stable material and, in the case of polyethylene, consideration had to be given to the fact that it would tend to soften and increase in length when soaked in the Larvex solution.

Product formula unchanged

The active ingredient used in Larvex in the new pressure package is exactly the same as that which the customer has been buying for years. No adjustment in formula was necessary or desired. Company spokesmen point out that Larvex is unique as a mothproofer in that its formula is such that it actually becomes a part of the garment fibres on which it is sprayed, thus producing impregnated, long-lasting protection that resists repeated dry cleanings. Any packager will readily appreciate, therefore, the merit of this new pressure package which did not demand formula change or require expensive promotional programs to assure public acceptance of a new formula.

In common with other aqueous-base products, Larvex was unable to use metal containers or even a metal valve because of the strong tendency of the water-propellant combination to cause corrosion. This problem of corrosion is not confined just to aqueous-type products. It has plagued many aerosol packagers right along and has kept some prospective users out of the field entirely. For that reason, the first commercially successful glass spray-type container is certain to be of wide interest.

Interest in the glass bottle for pressurized packaging has been growing ever since low-pressure aerosols began to take hold some five years ago. Glass, of course, has no incompatibility problem and corrosion can be entirely forgotten. But the glass container is breakable and involves extra packaging hazard where vapor pressure is contained. If the container is accidentally broken, the sudden release of the pressurized contents can send shattered glass flying and splatter the contents in all directions. The I.C.C. is strict about this where aerosols are concerned, although actually many bottled products now widely distributed without special protection, such as beer and carbonated beverages, are subject to fairly high internal pressures. Beer is said to develop much greater pressure than the Larvex pressure package at room temperature.

Zonite evolved a protective outer shell consisting of a convolute-wound fibreboard tube with crimped-on metal ends. The chief purpose of this canister is to provide a full margin of safety against the additional danger that might result if the pressurized glass container were broken when subjected to elevated temperature. Therefore, the metal ends of the canister are perforated and in the event the bottle breaks, the pressure does not escape in an instant, but instead is momentarily delayed in finding release through the perforations, which function as safety valves. Disks of corrugated board, inserted at both ends of the canister, also help baffle explosive pressure and keep glass fragments in the canister.

Incidentally, a different approach to the problem of producing a safe glass aerosol container is said to have been taken by the Bristol-Myers Engineering Co., Hillside, N.J. In this instance, instead of a protective fibreboard outer shell, the container is a plastic-coated glass bottle. Commercial development of this type of container is being conducted by one of the glass companies.

When Zonite had finally decided that the combination glass-fibreboard canister looked practical, the company subjected it to a thorough series of drop tests designed to break the glass bottle and reveal actual safe performance. Temperatures of 130 deg. F. were specified, thus producing a pressure within the container of approximately 60 p.s.i. The package

was then given drop tests from a height of 10 ft. onto concrete. According to a company spokesman, this test revealed that the Larvex package was safer in breakage than an ordinary, unsheathed, non-pressurized bottle. The canister, it was found, gave such excellent protection that drops of 4 ft. proved insufficient for the purposes of the breakage test. The 130-deg. temperature which is specified in the tests was selected because it was considered the highest that the Larvex package could be subjected to in ordinary shipping and handling.

The Larvex package is also subject to difficulties from cold temperatures, since Larvex can freeze and would then break the bottle. However, there is no additional problem in regard to pressure since the Freon gas condenses to a liquid at cold temperatures.

The Larvex container employs a crown cap so designed that removal is difficult. This is a safety precaution, as are the crimped-on metal ends of the canister. Disassembly of the container is quite impractical and instructions on the package caution the user: "Never take this package apart."

The all-plastic valve

The valve, also covered by patent applications, is basically a special plastic formulation. All component parts are formed in a multiple-unit mold to assure consistency of material and color. The only accessory parts are the polyethylene dip tube, a Neoprene gasket, a vinyl nozzle and an external stainless steel spring. Because of its special all-plastic construction, the problem of corrosion is entirely eliminated. This, of course, is a factor of major significance where valves are concerned. Other considerations, also common to the pressure-container field, are warping and etching of valve materials. In the case of Larvex, this difficulty would be aggravated because long shelf life is essential. It is common practice for a consumer to save a partially emptied container of Larvex from one season to the next and the same extended usage will apply where the Larvex pressure package is concerned.

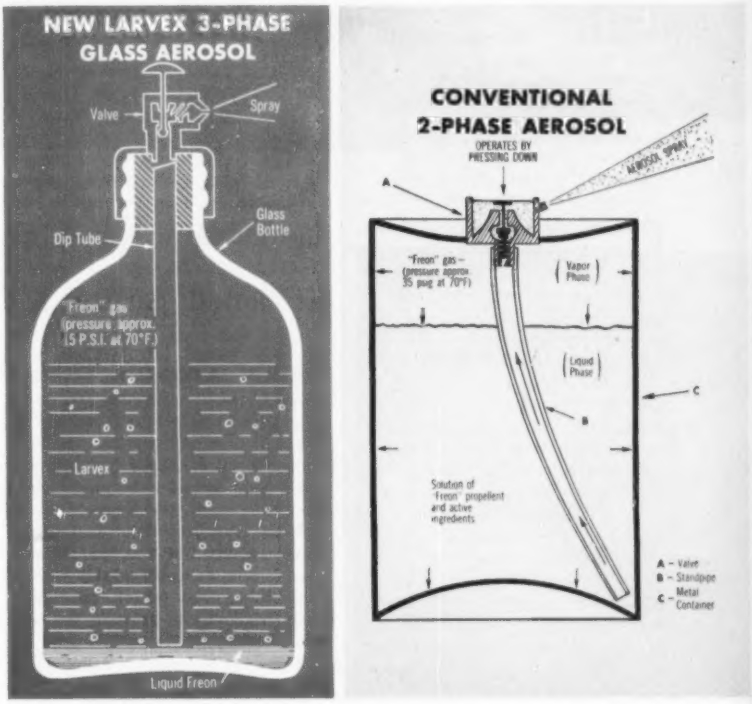
The first valves that were tried ran into a threat of warpage, especially at elevated temperatures. For this reason, the all-plastic valve was developed for the Zonite Corp. Much special research and development work were involved.

The valve is designed with sufficient height to permit it to project above the metal end of the canister and a special atomizing nozzle is used to produce a proper spray at low pressure. In conventional aerosol spray dispensers, of course, there is no atomizing nozzle as such; a simple hole allows the escape of a homogeneous solution of propellant and product.

With conventional type of cans the propellant is usually present in amounts that are as high as 85% so that on escaping through the nozzle there is sufficient energy from the flash-vaporization of the propellant to disperse the product as a mist, spray or—in the case of an emulsion—to blast it into a foam. Since the propellant does not escape with the Larvex in the new three-phase pressure package, propellant vaporization is not present to produce the spray. Therefore, an atomizing nozzle is essential and a coarse, wet spray is produced. In the case of Larvex, this is imperative, for it is desirable that the mothproofing spray wet the fabric thoroughly.

A rocker-type release is employed which permits opening of the valve when pressure is exerted from any direction. This means finger-tip control, allowing the user to operate the package with one hand, while the other remains free to turn garments and thus effect complete, easy spray of all surfaces—behind lapels, inside cuffs, etc. Spring action is not essential to the operation of the valve, but for Larvex an external steel spring is specified to assure more positive cut-off and to provide an added margin of performance. A removable styrene clip locks the valve in "closed" position to prevent accidental operation

(This article continued on page 172)



COMPARISON of Larvex and conventional aerosols shows the differences in their operating principles. In the three-phase package, the product and propellant do not mix and only the product is discharged from the nozzle, which is required to produce spray. In conventional-type aerosol, propellant and active ingredient combine and discharge contains as much as 85% propellant, which blasts the product into mist or spray when released through simple aperture.

COMPARTMENTED COOKIES

ATTRACTIVE APPEARANCE greets customer opening Kornreich Klein's cookie mailer. Compartmented cellophane strips retain freshness of product and prevent cookies from breakage.

Individually sealed in cellophane strips held in slotted partitions, Mrs. Kornreich Klein's fragile cookies ride the mails like a cloud

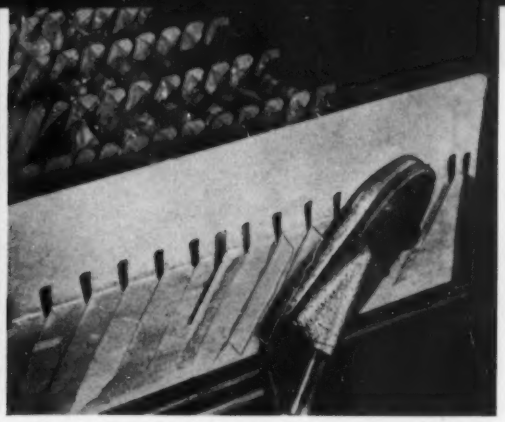
The expression "home-made" has been applied to many commercial food products, but for some types of baked goods, so many compromises have to be made with the recipe and production techniques that the product neither looks nor tastes like a truly homemade item. Even when price permits generous use of butter, fresh shell eggs and other home-cooking ingredients, producers often find themselves forced to depart from the original and preferred recipe to lengthen shelf life or to reduce fragility to permit adequate and economical distribution.

Protective packaging has supplied food-product producers with a part of the answer to longer shelf life through the use of packaging moisture barriers which eliminate the use of moisture-retaining additives in recipes. The fragility of some of the most delectable home-made cookies made with the true home-kitchen recipe, however, can be the most serious obstacle to profitable marketing. Many small "on the premises" bakeries, finding the demand for high quality home-made cookies to be great, have tried to expand this phase of their business beyond their immediate neighborhoods, but have found that cookies with the unmistakable home-made flavor and texture invariably fail to stand up to shipping impacts and vibration.

A packaging procedure adopted by Mrs. Kornreich Klein's Bakery, Milwaukee, Wis., appears to offer an efficient solution. This bakery turned its problem over to a package-design firm, which came up with a practical, light-weight protective package for about 10-doz. cookies. The package is reported to protect the most fragile, even crumbly, butter cookies through shipment and at the same time preserves freshness. Because the same material, cellophane, is used both to protect against breakage and to preserve freshness, the cost of this unusual package has been kept within practical limits for this type of luxury food product. Furthermore the package, when opened, displays contents to advantage. The box, containing approximately 135 cookies, sells for $4.95, mailed anywhere in the United States.

The original design for the Kornreich Klein cookie package has been

PAPERBOARD RACK which holds filled cellophane strips is loaded by hand. Rack is held in a metal jig to keep slots aligned for easy handling. Strip is heat sealed between cookies.



ANCHORING ends of the cellophane strips to outside of last slotted divider on each end is an important step. This area of paperboard has a thermoplastic coating for a firm, quick seal.

in use for about a year and a half. In that time it has demonstrated its ability to deliver by mail the most fragile types of cookies to customers in all parts of the United States, as well as in foreign countries, Alaska and Canada. It has been successful for shipments to men overseas in the armed services.

Minor improvements after early trials have pulled down the damage rate to something like one unsatisfactory package in 500—damage that can usually be explained by unwarranted rough handling. In its advertising the company features prominently a guarantee of safe (and fresh) arrival, with a replacement assured if the cookies do not arrive as represented.

A simple suspension technique, rather than the use of cushioning material, is the key to the Kornreich Klein cookie shipper. Cookies are first filled flat into long envelopes of heat-sealing cellophane, each of which holds six cookies well spaced out. The open edge of the envelope is then heat sealed and a dividing heat seal is formed between each cookie by means of a hand sealer. This creates a strip of six connected but individually sealed units, much like strip packages of tablets in cellophane.

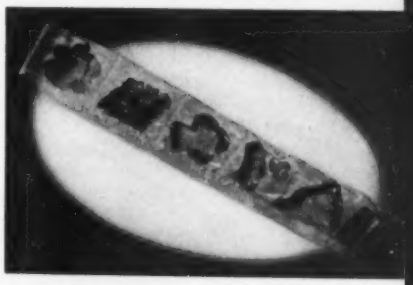
To assemble the 10-doz. package, 16 of the filled, sealed compartments are placed in a slotted chipboard frame or rack, which has slots cut nearly vertically to support the strips in an on-edge position. The heat seals between the cookies fit into the slots of the rack, leaving each individual cookie suspended in its own cellophane hammock, clear of both the bottom of the box and the slotted chipboard dividers.

To prevent the cellophane strips from shifting in the slots, the strips are made with an excess length which is folded over and heat sealed to the outside of the last slotted divider at either end.

When the package was first put into use, tests indicated that it was sufficient simply to heat seal the cellophane overlap to the bare chipboard. Later this was found to offer inadequate anchorage. The divider frames, therefore, now are supplied with a thermoplastic coating along the outside of the end members to secure the ends of the cellophane strips to the frame more firmly and quickly. During the time the cookie-filled strips are being inserted, the slotted divider frame assembly is held by a metal jig which keeps the divider slots aligned. The loaded rack is placed in an attractively designed set-up box measuring 15 by 15 by 3 in. The box is packed in a corrugated shipping container for mailing. For large orders, six- and 12-box shipping containers are used. For orders of two or three boxes, the individual shipping containers are simply gummed taped together. The only contemplated package change at the present time is the use of white paperboard in place of chipboard for the inner slotted divider rack.

The success of the Kornreich Klein cookie mailer has so increased the bakery's marketing potential that the company is up against the need for greater packaging volume. A number of gourmet shops and specialty grocers have expressed interest in car-

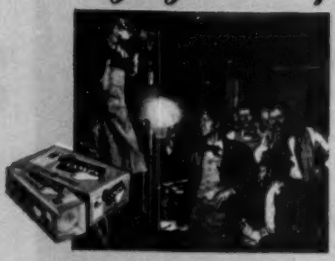
(*This article continued on page 182*)



HAND IRON is used to heat seal open edge and inter-cookie dividers. Machine loading and sealing have been unsatisfactory thus far.

SNUG FIT between divider frame and set-up box holds loosely jointed rack assembly together after box is filled. Final step is placing the package in individual corrugated shipping container for mailing.

Packaging's Hall of Fame®



FORTY-EIGHTH OF A SERIES

LIGHT BULBS

The first practical incandescent lamp, which Thomas Edison demonstrated publicly Oct. 21, 1879, was probably born with a greater potential for rapid growth and far-reaching benefits than any other device ever invented. In 74 years the Edison lamp, plus a galaxy of advances stemming from it, has resulted in more progress in conquering darkness and thus providing a basic comfort of living than occurred in all the flame-lit ages dating back from 1879 to the dawn of civilization. For going back some 5,000 years to the first crude stone lamp, lighting improvements were confined to the illumination that could be produced by an open flame and it was not until the 1800s that such now-antiquated marvels as the paraffin candle, kerosene lamp, gas mantle and the open arc came into being.

In sharp contrast to the once-slow path of man-made light, the incandescent-lighting industry, well within the span of only one lifetime, has skyrocketed into a commanding position in our economy. The over-all industry shipments in 1951 totalled 2,012,132,000 electric bulbs and tubes of all types with a total retail value estimated at more than $500,000,000. Artificial electric lighting—for homes, offices, stores, institutions, industry, street lighting, vehicles, traffic signals and the like—is now a push-button affair, practically as automatic as daylight itself.

A name synonymous with this age of artificial light is General Electric and the distinctive G-E monogram is a symbol as familiar as a 27th letter in the alphabet. The General Electric Co. is an outgrowth of the earliest research, manufacturing and marketing organizations formed by Thomas Edison to anticipate and keep pace with the rapid development of his invention of electric lighting.

Born with the incandescent lamp and with the beginning of General Electric was a packaging challenge that has probably never been exceeded in the demands made for protection of so fragile a product within such paper-thin margins of minimum packaging cost.

The light bulb, currently priced at about 14 cents for a 60-watt bulb, is certainly one of the world's prime examples of mass production and distribution of a precision-made product, sold everywhere at a price so low anyone can afford it.

The packaging of a G-E bulb—which is almost as fragile as an egg and must last much longer—is itself no small marvel and an important sidelight of G-E history is the continuous 70-year story of protective packaging, filled with vigorous pioneering that reduced packaging cost from dollars to pennies in the progress toward today's efficient corrugated-paper sleeves and corrugated shippers. As a result, "packaged light" is as much at home in the slam-bang of a variety store or supermarket as is a tube of tooth paste, a can of beans or a jar of cold cream. Yet the all-paper light-bulb container is one of the lowest-cost, lightest and most effective containers ever developed. Its protective efficiency and almost irreducible simplicity make it a star performer in mass handling and distribution, and these qualities contribute greatly to the economic scheme which makes the light bulb "one of the best values produced by the mass-output system."

The nomination of G-E light bulbs

'HEADQUARTERS OF LIGHT' is at world-renowned Nela Park in Cleveland. Here G-E has conducted lighting research and engineering that have led to continuous advances on industrial and home fronts. Today we have more than 100 times as many unit hours of light as we could lay claim to 50 years ago.

NOMINATED FOR PACKAGING'S HALL OF FAME BECAUSE:

- **Starting from scratch, their packaging developed new concepts of materials and construction, revolutionizing light-weight protective packaging.**
- **Using the same scientific approach to packaging as to mass production, it made fragile light bulbs a self-service item in the reach of all.**
- **In terms of cost vs. performance, this all-paper package is one of the most efficient low-cost containers.**
- **Its monogram and blue-and-yellow coloring identify a family of 10,000 products in 3,000 different packages.**

to "Packaging's Hall of Fame" is based on accomplishments so sweeping in this particular field of packaging that the product and its equally remarkable container are as much a commonplace as they are a necessity. The company took an entirely new product for which no adequate type of container existed and developed a protective package engineered to its unique requirements. In doing this G-E demonstrated to the fullest extent the inherent advantages of paper in overcoming problems of bulk and cost without sacrifice of protection.

General Electric is today, of course, only one of several producers of excellently and quite similarly packaged light bulbs. But G-E was the first in the field, is still by all odds the largest producer and was the unquestioned pioneer of virtually all the basic principles of today's light-bulb packaging.

As for the size of its packaging operation, G-E's Lamp Division—embracing some 34 strategically located bulb-manufacturing establishments as well as numerous plants making bulb components—turns out more than 10,000 types of electric lamps that require more than 3,000 types of packages. The number of pieces of packing material required in a year to move this production totals more than 750,000,000. Yet there are few package families today that are more closely unified under one set of colors, or more readily identified by a single package emblem. The explanation for this, obviously, lies in G-E's long devotion to the fundamentals of effective package merchandising, backed up by years of engineering the package to the product.

Always keenly appreciative of the utilitarian nature of its lamp products,

IRREDUCIBLE MINIMUM in bulk and weight—long the aim of General Electric's packaging research department—is neared in today's ingenious four-unit carton designed with prominent brand, product, quantity and wattage identification for rapid selling in many different types of retail merchandising outlets.

G-E has consistently pursued a scientific approach in promoting its bulbs. As a result, millions of dollars have been spent to develop the science of lighting and probably no other firm has excelled G-E in converting consumer education into a powerful merchandising tool.

The fountainhead of G-E's consumer-education program is Nela Park in Cleveland, which enjoys a world-wide reputation as the "University of Light." In its 16 ivy-clad buildings surrounded by 86 acres of campus-like park, extensive programs of scientific and commercial research

SHELF STOCKING of bulbs in the home, just like other staples, is promoted by G-E to keep sockets filled all the time. The modern four-bulb package doubles up two bulbs in a single sleeve, plays a major part in G-E's successful sales strategy.

MANY BRANDS of lamps were produced by licensees of the National Electric Lamp Assn. early in the history of the incandescent lamp. Shown are some of the numerous brand labels once current. Many used a second label to show the candle power or wattage.

are conducted by more than 2,000 employees. The Lighting Institute at Nela is host to more than 35,000 "students" a year attending demonstrations of the most advanced home, store, office, industrial, architectural and school lighting.

An important co-product of the research work at Nela is the sparking of national advertising programs. Basically keyed to themes of progress and product quality, G-E lamp advertising has produced major promotions with broad appeal and lasting impact. One of the most telling of these was the Better Light–Better Sight campaign.

In earlier days, a beaming Old Sol was told that Mazda lamps were "His Only Rival." Continuing in a vein of friendliness and helpfulness, today's ads have brought a new word, "bulb-snatcher," into our language.

The beginnings

The Dean Cornwell painting reproduced on our cover this month portrays the birth of the incandescent lamp bulb in 1879. Thomas Edison had put the results of months of experimentation together in the form of a crude bulb containing a filament of carbonized cotton thread. Mr. Cornwell shows the Menlo laboratory staff gathered about the 32-year-old Edison as he hooked up the wires. The switch was thrown and a soft light radiated from the lamp. Fascinated, the scientists watched the slender, glowing "hair pin" throughout the night, expecting it to vanish at any moment, but for nearly two days the crude marvel continued to give light.

No less significant than the invention of the bulb itself was the electric system that Edison devised to set in motion the development of electric-power systems that would make incandescent lighting both practical and universal.

Edison's first lamps were born into a packaging world that thought primarily of protection only in terms of bulk and weight. Consequently, the first lamps were clothed in cotton wadding, individually cartoned and then packed in a barrel liberally padded with straw. The barrel itself was frequently bustled with pads around its waist and chimes. This type of packaging was undoubtedly borrowed from the pottery industry and its experience with handling fragile but heavy shipments.

By 1903, however, G-E was beginning to think of packaging in terms of materials and methods tailored to the particular requirements of its products and was able to replace the barrel with a wooden box, reducing the weight by one-third and cutting space requirements in half.

This forward step was made possible by adopting a corrugated paperboard sleeve as an individual cylindrical wrap for the lamp and by padding sheets of corrugated between layers and at the sides of the box. Where unusually heavy handling abuse was anticipated–and horse-drawn cartage and cobblestone streets of that period must be visualized–the new wooden box was sometimes "floated" within an outer wooden box by suspending the inner box on ropes anchored to the corners of the outside box–a primitive form of the full-floating pack still used for costly electronic tubes.

Lamp packaging was not destined to become easier, however, for during the next seven years the fragile tantalum filament, producing more lumens of light per watt, was adopted and this was followed shortly by the practically spineless, pressed tungsten filament.

During the years when these better-performing but more delicate materials were employed, excelsior was adopted as a padding material. Later the improved drawn tungsten filament was introduced and the product, much less temperamental as a result, made lighter demands on the package.

G-E lamp packaging took a giant stride forward when the wooden shipping box was replaced with a corrugated carton. This was made possible by improving the individual lamp-bulb wrapper. The new wrap, called the "Midge," (short for Midwest and G-E) consisted of a piece of corrugated straw paper glued to a larger sheet of strong paper. The lamp was rolled in the corrugated paper and the plain paper was twisted in at the top to form an effective padding and protect the glass tip. Until

1919 the glass tip was a necessary construction feature of all incandescent lamps, but prior to 1917, when the twist-top wrapper was introduced, the cylindrical jackets were open at the ends and the glass tips were vulnerable.

Adoption of the Midge wrapper made possible the abandonment of excelsior as a cushioning material, eliminated litter and fire hazard, and saved 20% in space.

Lamp identification

Factors other than protection are involved in lamp-bulb packaging. Not only must the brand be identified, but electric ratings must be specified.

During the early days of the incandescent lamp there were actually dozens of different brands of bulbs. Numerous manufacturers were licensed to make and sell bulbs within a loose framework known as the National Electric Lamp Assn. The word Nela, incidentally, is derived from the initial letters of this group which developed side by side with General Electric and was later merged with G-E.

Each brand, including G-E, had its own gummed label. These were quite colorful and many had intricate die-cut shapes. G-E, back in 1912, put two labels on each bulb and at one time the rating was given in candle power instead of watts. A look at a collection of the old labels and the diversity they reveal is enough to suggest what might have happened in the lamp industry had individual differences been followed in all directions. On the other hand, the fact that a light bulb purchased in San Diego will fit a light socket in Philadelphia, plus the fact that wattage ratings and markings are uniform, suggests that the consumer today has probably benefited greatly as a result of the standardization and unification that early took shape within the industry.

The year following World War I, G-E discovered how to make a tipless bulb. This was not only a significant advance production-wise, but it opened the way to further improvements in packaging. For one thing, it became possible to apply markings directly to the bottom of the glass bulb—first by sand blasting, then by outside silvering and later by inside silvering. Today's lamps are stamped with a special type of ink on the inside of the bulb.

Early packaging meant bulk and weight

FIRST SHIPMENTS of bulbs were in straw-lined barrels. Typical of protective packaging 70 years ago, they started the battle against bulk, weight and breakage.

PRINCIPLE of engineering package components to meet product requirements was pioneered by G-E in this type of shipment, which replaced the barrel. Heavy though it appears, it reduced weight one third, bulk by one half.

During the early '20s a five-pack and later a six-pack chipboard dealer carton replaced the 16- to 30-pack corrugated dealer cartons and effected a truly revolutionary trend in which bulbs were transformed from bin and under-the-counter items into full-fledged shelf goods. The dominant feature of this carton was a bright blue background on which "National Mazda Lamps" was labeled with boldness and simplicity. A picture of a light bulb was centered on each of the four side panels of the carton and a circular bird's-eye view of Nela Park appeared on the tuck-top end flap. By all then-known packaging standards—protection, display attractiveness and ease of handling by jobbers, dealers, con-

All-paper self-selling packages

CHANGE to shelf-stock status from under-the-counter goods was effected with six-pack carton. Twist-top corrugated paper wrap, called the "Midge" and first used in 1917, advanced the new principle of light-weight protection and paved the way for every important advancement that was to follow.

OPEN-END sleeve-style carton carried to logical conclusions the advantages of the square-shaped sleeves to provide a compact, self-reinforcing package structure. The square-shaped individual sleeve with circumferential corrugations appeared in 1925.

FAMILY RESEMBLANCE of lamp packages is extended to over 10,000 G-E products in 3,000 different containers by wire-like monogram, blue and orange-yellow colors.

MERCHANDISERS are designed for types of outlets where bulbs are sold. Impulse purchase is now a very big factor in the retail sale of lamps, which is a factor affecting the design requirements of the package. The fragile product is so effectively protected by its feather-light container that the package suits any retailing environment.

sumers—the six-pack carton was well designed to end forever the bin-stock era of lamp merchandising that had started only three decades earlier with crude shipments in barrels.

As has been noted, the Midge or circular twist-top individual-bulb wrap was a high water-mark in the forward advance of G-E packaging. It helped wipe out the need for wooden boxes that required a screw driver to open, it eliminated excelsior packing and it led to the adoption of a compact, trim and clean corrugated shipping case. The Midge wrapper opened the way to the adoption of the six-pack display carton and together with this carton excelled in identification and display, at the same time reducing breakage to a negligible factor.

However, even as these accomplishments were in progress, G-E—now more packaging conscious than ever—was carrying on an endless amount of research. Materials of every conceivable grade and weight were being tested. Wrapper models in countless numbers were designed, constructed and subjected to rigid performance tests. In fact, as one spokesman for the packaging department has said, "It would have required a large display room to show all the new materials and models that were being worked on during the very two years when the Midge wrapper was being acclaimed as the ultimate in lamp protection."

Here, then, is one of the most significant lessons that packaging has to offer, for G-E, by its refusal to sit back and wait for a successful package to become slowly obsolete, showed a realization of the dynamic forces that give modern packaging its most dominant characteristic, at the same time recognizing that significant changes are not effected by chance but as the result of relentless activity using much science and many skills.

The square wrapper

As a result of its package-development activities, G-E soon was able to replace the excellent Midge wrapper with an even better "F"-type open-end sleeve. The open-end construction permitted quicker indentification of the wattage, allowed the bulb to be tested while in the jacket, made removal from the wrapper much easier and because of its square shape made wrapping in the retail store easier.

The square sleeve reduced cubic content of the dealer package 20%, thus resulting in significant shelf-space economy. At the same time the package was made 15% lighter in weight. So many tons of paper were saved that for one manufacturing plant alone this meant a saving of 200 box-car shipments of wrappers a year. On the packaging line, the simplicity of the new sleeve reduced the packaging operation from inserting, wrapping and tuck-in to merely inserting the bulb in its jacket. Better protection resulted, too, because the sleeve was made up with a circumferential pattern of corrugations that provided a better grip on the bulb. Previously, the corrugations had extended parallel with the length of the bulb.

About 1931, after extensive tests, Fourdrinier kraft paper was substituted for jute in the shipping containers. This light-weight, 9-pt., strong, puncture-resistant shipping case reduced the weight of the package close to the irreducible minimum.

Until 1948 package construction for incandescent lamps was stabilized. Then came another important G-E first—the four-lamp carton containing two sleeves, each of which contains two popular household incandescent

ONE OPERATOR controls case sealing and routing of 3,000 lamp shipping cartons a day with this ultra-modern installation at the G-E St. Louis plant.

RESEARCH is a cornerstone of G-E package engineering. Above is a drop tester going into action.

lamps. A die-cut window in the panel of the sleeve is pushed inward to provide a buffer between the bases of two lamps inserted base to base in the duplex container.

Quantity, product, wattage and brand were given top billing in the new design. Here was a package aimed like a bullet at the self-service customer. Protection-wise there had been little room in which to progress, but from the standpoint of neatness and visual appeal it topped any G-E lamp package yet produced. What's more, it lopped off another whopping 14% from the per-lamp cube of the package.

The decision to go to the four-pack came about in a rather interesting way. G-E market researchers, as the result of long-term studies, suspected that consumers preferred packaged bulbs to loose bulbs and smaller packages to big packages. Test packages were designed containing three, four, five and six lamps each. These were stocked in all kinds of retail outlets in carefully selected test cities, giving customers a choice of purchases. This test, extending for a four-month period, revealed the buying pattern of the majority of customers. The result was the easier-to-identify-and-select four-pack. Preference studies show that sales now run about 86% packages and 14% single bulbs.

Design evolution

In the beginning, G-E lamp packages called for and received little decoration, in keeping with their bin-stock character. But even so, about a half century ago one of the most important events in trademark history took place when the famous G-E monogram was born. It's origin, according to one authority, was simply a doodler's inspiration. One of G-E's pioneers, attending a packaging conference, idly formed a circle; added some hooks, inserted G-E and thus one of the mightiest trade symbols in American business was born.

The circular monogram was ideally conceived for use on bulb-shaped products. As a blend of simplicity and distinctiveness, the monogram has few equals.

With the introduction of the Midge twist-top wrap, color and ad copy converted the package into a sales vehicle. The over-all background color on the cylindrical wrap was yellow. The name Edison appeared in large blue letters at the top and the word "Mazda" at the bottom. The center of the package showed a smiling sun peering over the top of the earth at a gleaming glass-tipped lamp. "His only rival" was centered above this friendly tete-a-tete of light.

The word "Mazda" was derived from early Persian lore and is the name for the god of creation. Since 1945 less emphasis has been placed on the name.

The "National" blue shelf-display package, described earlier, appeared in the '20s and remained popular for many years. In 1938 an all-white background was adopted for the six-pack display cartons simply because the savings in ink were enormous. However, this economical design could not buck the trend to self service and by 1946 over-all color was back to assure full attention-getting strength. A new color era was inaugurated with abandonment of solid blue for a combination of blue and an orange-yellow. This produced a brighter and more attractive color for a self-selling package.

The stamped marking on the end of the bulb was also altered, three years ago, in the interests of quicker bulb selection. The wattage was centered in the marking for greater prominence. The change was a weighty one, favoring consumer convenience over trademark emphasis, but was well justified by marketing studies of shopper problems as recorded by continuous movies taken with a concealed camera.

It might be thought that the lamp bulb would be the farthest thing from an impule-purchase item. It is strictly utilitarian and it would seem that the number of bulbs sold would be limited to the number of light sockets requiring them. But G-E has made great strides with its campaign to persuade housewives to keep a *reserve* supply of bulbs on hand, with the result that many pick-up purchases can be directly attributed to impulse.Two out of every three light bulbs used in the home today are purchased by women and grocery stores account for 40% of sales to this market.

Packaging methods

There is one anomaly in the great mass-production lamp industry, which literally employs acres of high-speed production machinery. The

packaging is still done by hand. There are two explanations for this. First, the bulbs as they come from the basing reels require critical inspections that only human eyes can perform and it has been entirely practical to have the operator who inspects the bulbs do the packaging. Secondly, because of the efficiency and simplicity of the package itself, the labor content is so low that no complex machine can compete economically under present conditions.

However, case sealing is another matter entirely and here the full potentials of automatic conveyors and push-bottom control have been combined to enable one operator to seal and route 3,000 shipping cases a day.

G-E has long had a well-developed packaging department. In recent years a packaging committee, consisting of representatives from quality control and testing, market research, advertising, sales, manufacturing and warehousing, has served in an advisory capacity to direct and coordinate packaging activities. A packaging laboratory at Nela Park applies the scientific approach.

Humidity and temperature are continually controlled in the laboratory, which is equipped with a humidity cabinet, compression and fatigue tester, puncture tester and a huge vibrator. The vibrator simulates the bumping, jolting action of a freight car or over-the-road truck. Incidentally, G-E installed a rotary "torture chamber" for testing cartons as early as 1917 after having made use of a similar device at The Forest Products Laboratory.

One of the chief goals of the laboratory today is to assure conformity of delivered quality with specified standards. The function of testing is vital in the success of G-E packaging because of the vast quantities of materials consumed and the premium placed on getting maximum performance from extremely light materials.

G-E lamp products range from a tiny "grain of wheat" surgical-instrument lamp to a jumbo 50,000-watt lamp, weighing 35 lbs. and using enough energy to supply the average lighting load of 40 American homes. Since 1938 the fluorescent light has come on so fast that it has now won the title "King of Illuminants," although the incandescent volume, already of mammoth proportions, continues to grow side by side with fluorescent.

The corrugated paper sleeve was readily adapted for fluorescent tubes and its success in protecting the long slim wand of glass is an unchallengeable testimony to the soundness of G-E package engineering, developed over the years, and to the effectiveness of light-weight paper material for a critical job of protection.

The largest fluorescent tubes are 8 ft. long. They are packaged in two different styles depending upon the final distribution. One of the packages developed by G-E consists of four 8-ft.-long triangular units each containing three lamps. The lamps have a corrugated sleeve placed at each end. The four triangles are held together by a corrugated outer folder making a shipping container of 12 lamps. In this, as in other instances, G-E follows a policy of packing lamps in multiple units that can be readily subdivided. Perhaps the most significant of all G-E's contributions to packaging is the skill with which it has engineered multiple-package constructions to improve protection, reduce space and cost, and at the same time make the packaged product more merchandisable.

PROGRESS IN LIGHTING is an irresistible merchandising tool as used by G-E. Horizon House at Nela Park symbolizes and gives application to the philosophy of science and service that was born with Edison's "greatest invention."

Advertising and promotion

G-E lamp advertising is not keyed to a volume of sales, but follows the steady route all the time. The market for incandescent bulbs used in general lighting takes in everyone, although, as has been noted, women shoppers account for a large percentage of the purchases.

The broad base of advertising consists of the big national weeklies—*Life, Saturday Evening Post* and similar magazines. A balanced promotional program is sought by supplementing magazine campaigns with radio spots in dozens of cities throughout the country.

Well remembered among famous radio programs is the former nationally broadcast "Hour of Charm," with Phil Spitalny and his all-girl orchestra. The lamp division, which now shares in G-E's sponsoring of the Fred Waring show, was the first G-E division in TV.

G-E lamp advertising has consistently followed a "service to the user" theme. Scareheads and other sensational approaches have never been considered suitable and even the suggestion of a lightning streak, which tempted some designers, was taboo.

Messages directed to home users are characterized by friendly, even humorous, touches, such as are shown in current ads featuring Steig cartoons and the whimsical antics of the "bulbsnatcher."

Ads promoting specialty lighting—for stores, offices, industry, photography and the like—generally highlight what is "the payoff *lately* for the user of G-E products" and are summed up in slogans such as "You expect the best value from G-E fluorescent lamps" or "You can put your confidence in G-E."

Illustrations of the package and prominent display of the G-E monogram in printed ads are musts and are considered range finders directing buying influence "on target," thus

(This article continued on page 185)

Chicken for everybody

Keeshin's new five-color waxed wrapper for cut-up frozen fowl is called 'the ultimate'

OLD **NEW**

CONTRAST between former package (left) and colorful new Keeshin wrapper is immediately apparent. Full-color illustrations against bright yellow and white background provide strong appetite appeal—a quality lacking in the utilitarian predecessor. Back panel of package carries defrosting instructions and sell copy. Cooking instructions appear on folder inside the carton.

As today's housewife places one or two packages of frozen, cut-up chicken in her supermarket basket and moves along to other food selections without delay, she may not realize—particularly if she is in a younger age bracket—what a revolution has taken place in retail poultry selling in recent years.

This deep-seated merchandising change, achieved through improved techniques of quick freezing, owes much of its success to parallel progress in packaging materials and methods, which helped to take chicken out of the luxury class and make "chicken every Sunday" a phrase applicable to a much larger body of consumers.

Not so many years ago the city dweller with a craving for poultry purchased a live bird, either having it dressed by the butcher or taking his clucking selection home to be dispatched by means of the family hatchet, neck wringing or other equally unpleasant means. Then came the disagreeable task of picking (including removal of pinfeathers), eviscerating the bird and cutting it into portions for cooking and serving. This routine was hardly one to encourage sales of poultry.

Before the poultry industry reached its present state of development, frying and broiling chickens were obtainable only in spring or summer. But with the general adoption of quick freezing and packaging by many firms in the industry, the consumer has a wide choice of broilers, fryers, cut-up chicken, etc., throughout the year.

Through freezing and packaging, the housewife may now buy poultry to fit the specific needs of her family; if the question of who gets the drumsticks becomes a formidable issue because there are more than two children in the family, the problem can be neatly solved by purchasing an entire package of chicken legs. This change in basic poultry-merchandising methods has naturally put great emphasis on functional, attractive packaging which would enable poultry to compete advantageously with other food products.

PRESENTATION CASE used by salesmen provides a jewel-like setting, with its velvet lining, for selling Keeshin poultry to retail stores.

Belief that the frozen poultry package must provide positive sales appeal as well as protection for the product resulted in the recent decision of Keeshin Poultry Co., Chicago, to adopt a completely new wrapper design for its entire line, which includes chicken breasts, chicken wings, chicken legs, split broilers and cut-up chicken.

In its plants at Rogers, Ark., one of the nation's finest poultry-producing areas, Keeshin packs the chickens under federal inspection, flash freezing them at 40 deg. F. below zero. The birds are shipped via refrigerated truck for retail distribution in several Midwestern states. Keeshin's sales, which include several million chickens annually, are about 90% for the retail and 10% for the institutional

Production procedure

PACKING PREPARATION begins after chickens are thoroughly drained of washing water before being cut up into parts. Chickens move into cutting and packaging room by overhead conveyor, are packed under Dept. of Agriculture inspection.

PARTS ARE PLACED into one-piece folding cartons with self-locking front tab before being drained of washing water. Filling and closing are hand operations; carton wrapping is automatic. Boxes are weighed, marked and closed before going to wrappers.

trade. New flocks are started each week in order to keep the plant supplied with top-quality birds throughout the year.

Buyer reaction to the new wrapper is indicated by the fact that soon after it reached the market this summer, sales increased more than 200% in one grocery chain and more than 300% in another. According to M. A. Rusteen, sales and advertising manager of the Keeshin organization, the new package was a major factor in opening up new markets and outlets for the entire line. Since the wrapper represents a radical change from the previous package design, shipments using the new label were scheduled so that outlets could make a complete switch-over whenever possible, rather than find their stocks divided between the two types of packages.

Keeshin's new overwraps are outstanding in their color treatment, their appetite appeal and their technical perfection of printing. They are printed in five colors by rotogravure process on a paper which is specially waxed for attractive gloss and quick, positive heat sealing. The mouth-watering full-color illustrations, each showing a well-filled platter of chicken ready for serving, were attained by making the rotogravure plates directly from carbro prints. The wrappers are applied on two types of wrapping equipment over the folding, one-piece inner carton in which the pieces of chicken are packed.

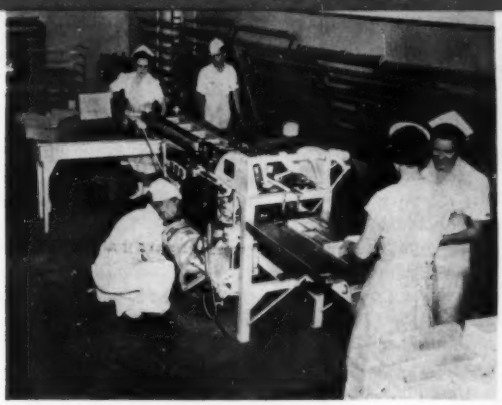
In a field where most competitive packages also employ product illustrations, it is not a simple matter to come up with a distinctive surface design. The Keeshin wrapper, developed by a well-known package designer working in close cooperation with Keeshin officials and their advertising agency, attains individuality through its unusual color combination and immediate identity. The combination of white and bright yellow for the background of the wrapper sets off the other colors in brilliant contrast and also emphasizes the size of the packages.

A fundamental feature of the wrapper design is the prominence of the Keeshin name, which appears in distinctively hand-lettered blue capital letters on all major panels of the package, and the relative subordination of the Peak of Perfection brand name, appearing in red beneath the company name on the top display panel only. This emphasis on the company name, according to Mr. Rusteen, was designed to build stronger company identity. The long-term plan is gradually to diminish the Keeshin name and enlarge the trade name as distribution is widened and recognition of the new package firmly established.

Despite the fact that the product is frozen, the designer reasoned that the consumer is most interested in how it will appear while still warm from the stove, ready to serve. Thus the use of a warm background color—yellow—was deemed appropriate. The uncluttered appearance of the new packages, achieved through minimum use of printed matter on the wrapper, makes them particularly well suited to conditions of self-service merchandising.

The family design followed throughout relates the packages unmistakably by origin, but there is little likelihood that the customer will select the wrong package because she is guided both by the serving illustration (each of which is different) and the product description, which appears boldly in reverse white against a red banner-type background. This information panel, which appears on the top, bottom and two sides of the package, is accentuated by a shadow treatment at the edge.

A cartoon-type line-drawn illustration of a haloed chicken, with the phrase, "Simply out of this world!" appears on the top of the package and is also used on the bottom surface, in conjunction with a box enclosing brief sales copy and encouraging the buyer to "Try kitchen-tested recipes inside the box." Instructions on defrosting before cooking are



IN-FEED END VIEW of one of the automatic wrapping machines. The waxed, heat-sealing wrappers are fed directly from a continuous roll (left), with wrapper cut-off and registration controlled by electric eye. Machine is adjustable to all box sizes.

COMPLETED PACKAGES come off the delivery end of the wrapping machine, ready for packing into corrugated cartons and placement in freezer, where the product is frozen at 40 deg. F. below zero. Wrapping speed is about 50 packages a minute.

printed in a blue panel also included on the bottom of the package. A rectangular pricing patch, with provision for inserting weight in pounds and ounces and total price, appears on the top of the package, tied in closely with the product illustration.

Each of the Keeshin packages also carries copy calling attention to other items in the line. Beside the specific product name on each side panel and the notation, "Keeshin Quick Frozen Chicken," appears the suggestion, "For a treat try Keeshin chicken legs, breasts, wings, split broilers, cut-up chicken . . . also livers, gizzards, hearts, backs and necks, eviscerated fowl, eviscerated roasters." Menu suggestions are not printed directly on the package, but on a small parchment folder placed within each box. This arrangement helps to keep the colorful wrapper free of excess type matter and also permits the use of different recipe folders without disturbing the standard wrapper.

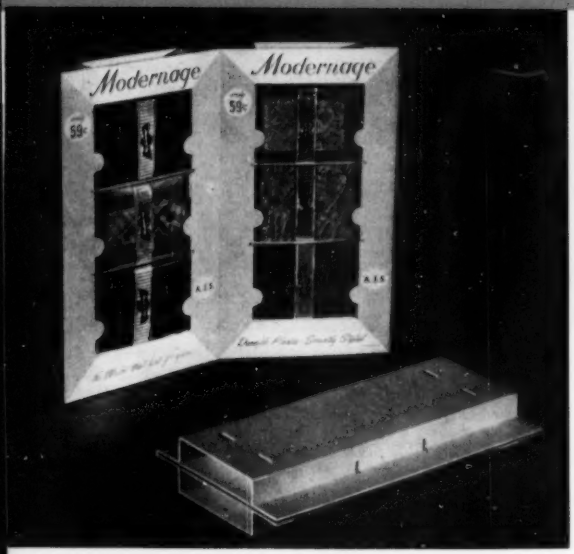
In marked contrast to the new design, the previous Keeshin package carried no product illustration and made no attempt at appetite appeal. It consisted of a folding carton, purely utilitarian in nature, carrying the Peak of Perfection brand name, company name (in small type) and brief additional information. The carton was printed mainly in blue, supplemented by red on most type matter and small touches of light green. Inside the package was a die-cut paperboard platform or cover having a cellophane window through which the frozen product could be seen if the carton was opened. Unfortunately, this construction encouraged prospective buyers to open the boxes prior to purchase, causing damaged packages and jumbled stocks. Seen through the transparent window, the frozen chicken had little appetite appeal and this package feature proved of no merchandising value.

In the Keeshin plant, the chickens after picking move into the cutting and packaging room via overhead conveyor lines. After being eviscerated and cut up, they are packed by hand into the one-piece folding cartons, which are of white sulphite board, waxed and have an inner locking flap on the front panel. The largest of these cartons, used for the complete cut-up chickens, measures approximately 6⅝ in. by 6 in. by 2⅝ in. After filling and manual closing, the cartons are wrapped automatically or semi-automatically on two types of wrapping equipment. The automatic machines, which are operated at a rate of approximately 50 packages per minute, apply the printed wrappers directly from continuous rolls. They are equipped with an electric-eye device which controls wrapper cut-off and registration. The completed packages are packed in dozen lots in corrugated shippers, then immediately transferred into the freezer where flash freezing of the product takes place. Another advantage claimed for the new wrap is that it eliminates the problem of freezer burn of the product.

To dramatize the sales appeal of the new wrappers, Keeshin Poultry Co. utilizes a special sample case lined with blue velvet, into which samples of all five packages fit neatly. When the case is opened as part of the sales presentation before the store or chain official, the colorful new wrappers are shown off to advantage in their jewel-like setting. This special display unit, the company believes, has been highly instrumental in opening up new sales outlets for the Keeshin Poultry Co.'s line of quick-frozen poultry.

CREDITS: *Package redesign, Louis A. Pesmen & Associates, 322 N. Michigan Ave., Chicago. Inner cartons and rotogravure printed overwraps, Marathon Corp., Menasha, Wis. Corrugated shipping containers, Container Corp. of America, 38 S. Dearborn St., Chicago, and Lawrence Paper Co., Lawrence, Kan. Wrapping machines, Globe Co., 4000 S. Princeton Ave., Chicago, and Schooler Mfg. Co., 101 W. Magnolia Blvd., Burbank, Calif. Product illustrations and carbro prints, Charles F. Kuoni, 61 W. Erie St., Chicago.*

Design



Display shipper ups wallet sales

A sales jump of 350% is reported for plastic wallets marketed by the A. J. Siris Products Corp. with the introduction of this new shipper-display unit. The new displays cost 20 cents a dozen in comparison with 34 cents a dozen for the merchandisers formerly used and labor costs have been reduced 50% through the elimination of "lost motions" in package handling and shipping operations. Of folding picture-frame construction, the unit is made of heavy 60-pt. display board and holds 12 wallets, six to a side. Die-cut apertures for the wallets have a lip device on each side for snap-in insertion and snap-out removal. A score line down the center of the unit enables folding for shipping and division of the unit to make two separate displays. Thus the display may be "sized" to available retail display space.

CREDIT: *Design, Alan Berni & Associates, Inc., New York.*

All the makings for a fruit cake — including baking pan

Hills Bros. Co. now offers its Dromedary Dixie Fruit Cake Mix in a complete kit that includes a metal can of fruits and peels, a glassine bag containing dry mix, a metal baking pan in which to make the cake, a metal lid and a glassine liner for the baking pan—all packaged in a compact folding paperboard carton. The only other ingredients that must be added by the homemaker to complete the 1¼-lb. fruit cake are one egg and two tablespoons of liquid.

The carton features a full-color illustration of the completed fruit cake against a gold-colored background. Spotted against the cake illustration is the legend, "Packed in the pan you bake it in." Back panel of the carton gives the three simple directions to follow in making the cake, together with line drawings of the three steps.

CREDITS: *Carton, Lord Baltimore Press, Baltimore, Md. Metal can, American Can Co., New York. Glassine bag, American Paper Goods Co., New York. Die-cut glassine pan liner, Deerfield Glassine Co., Monroe Bridge, Mass.*

Histories

Bags that save the user both time and money

Large printed bags for packaging Balsam-Wool batt insulation have resulted in substantial savings for the Wood Conversion Co. Former hand wrapping required 15 men on each of three shifts and the flow of material had to be geared to the speed of the workers. With the introduction of the paper bags and simple machinery that partially compresses the batts and inserts them into the bags, the labor force has been reduced to nine men and the flow of material can continue uninterrupted. The flat, rectangular new package requires so much less space that freight cost is expected to be only about 18% of that for the hand-wrapped packages. Comparable savings are made in storage and warehouse space. Because of the effectiveness of bags for batt insulation, bags for packaging the company's other products are being considered.

CREDITS: *Bags, Bemis Bro. Bag Co., St. Louis. Compression machine, Rockwell Engineering & Equipment Co., Elmira, N. Y.*

Swedish designers' ideas for wine-bottle labels

The seven label designs illustrated are representative of those entered in a recent contest sponsored by the Swedish Liquor Monopoly, the semi-official institution which handles all import and wholesale business of wines and spirits for Sweden. The Liquor Monopoly believed that the old-fashioned rectangular labels on wine bottles were colorless and unimaginative. The contest was limited to seven of Sweden's foremost designers and industrial artists, selected by Dr. Bror Zachrisson, head of the Swedish Graphic Institute. The artists were given a fairly free hand for the contest. Some 40 different label designs were submitted and exhibited at the Swedish Assn. of Arts and Crafts in Stockholm, where they were generally hailed as extremely pleasing, artistic and effective. All the label designs were modern in feeling and most of them showed label placement toward the bottom of the bottle, a new departure which adds to the eye-catching quality of the bottles.

PHOTO, AMERICAN-SWEDISH NEWS EXCHANGE, INC.

INSTANT RECONSTITUTION of powder-form drug is possible in this Duomatic disposable polystyrene syringe used by E. R. Squibb & Sons. Many drugs, particularly antibiotics, keep best in dry storage. Duomatic has glass cartridge containing dry drug and a liquid separated by a rubber stopper. Photo illustrates Duomatic being readied for injection—pressure against lower stopper has advanced the liquid portion of the dose and the center stopper, uncovering the channel in glass cartridge wall through which liquid reaches powder chamber.

Disposable injectables

Pre-packaged parenterals in new throw-away syringes save precious time and may be a significant contribution to national health

The old-fashioned hypodermic assembly in the doctor's bag may eventually be replaced entirely by new self-contained, single-dose disposable syringes that serve both as a package and an injection device. These precision-engineered packages show promise of becoming one of the biggest time savers in modern parenteral therapy.

Parenterals are injectable medicines that go directly into the tissues by hypodermic needle. Their use has increased more than three-fold within the last five years following the discovery of new "wonder drugs"—sulfas, antibiotics and biologicals—and through the use of vitamins, new anesthetics and analgesics now supplied in injectable form. In the drug industry injectables are now reported to account for a $200,000,000 sales volume annually and, if the trend to this method of medication continues, may become one of the largest-volume items in drug manufacturing.

By using a single-dose, sterile, throw-away syringe, the doctor or nurse is relieved of the troublesome and exacting job of reconstituting concentrated or powder-form drugs and measuring an accurate dosage. The time-consuming task of sterilizing and assembling the old-type hypodermic syringe is completely eliminated. The disposable syringe package is estimated to enable a doctor to make 20 calls in the time it formerly took him to make 15. In large hospitals and clinics, a package that can eliminate a 15- to 20-min. task that must be repeated several hundred times a day can be a major aid in relieving the pressure on hospital personnel.

Although some pharmaceutical firms have had disposable syringe packages on the market since World War II, interest seemed to have slackened until this summer when half a dozen major firms introduced new units within the space of a few months. Designs varied from an improved metal syringe which takes two sizes of single-dose glass cartridges to a completely disposable unit made entirely of polyethylene except for the needle and a rubber stopper. Much experimental work also is being done on polyethylene "squeeze-bottle" types.

Standardization of dosages and formulations of all but the newest drugs and the keen brand competition in the drug industry are currently contributing to further rapid development.

From the drug-manufacturer's standpoint, the throw-away syringe package offers several important advantages. With an efficient syringe package of special design, he can, for example, completely distinguish his brand of "Penicillin G Procaine" from that of his competitors. Package individuality is of growing importance when so many of the injectable drugs have become such highly competitive standard items, thus trimming the profit edge. The special package can also help to offset the effect of reduced foreign markets with the resumption of drug manufacture in other countries.

Technical advance

Early disposable-syringe designs were largely attempts to produce a simplified version of a standard glass syringe which would be inexpensive enough to be discarded, yet satisfactory as a protective container for a single dose.

The forerunner of all self-contained single-dose injection units is said to be the Syrette, a metal collapsible tube with an integral injection needle. E. R. Squibb & Sons started work on this device in 1938, perfecting it in time to

supply the Armed Forces throughout World War II.* Syrettes were an important item in medical-corpsmen's kits and are currently being supplied filled with special preparations for Civil Defense needs.

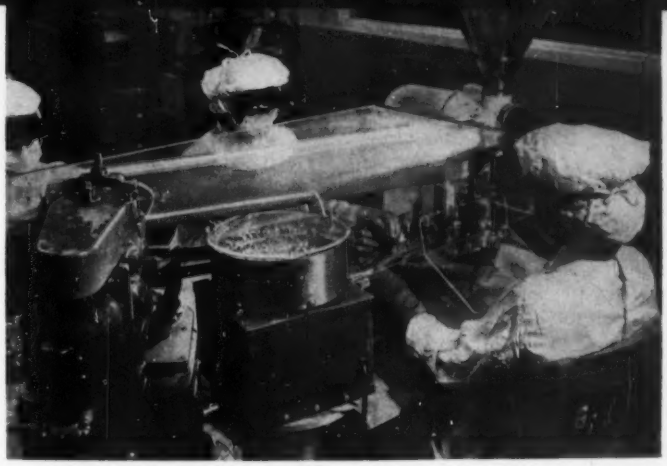
However, it was 1945 before the first true disposable syringe, looking recognizably like a conventional hypodermic syringe, was introduced for civilian use by Abbott Laboratories, Chicago.

The practicality of disposable syringes has been greatly aided by the development of antibiotic formulations which do not need refrigeration when stored in prepared, ready-to-inject state. Penicillin, for example, until quite recently kept most successfully in powder form, but is now produced as an injectable solution or suspension with buffering and stabilizing substances which maintain the drug's potency and character for many months of storage at room temperature if the container is adequate.

Experience with multiple-dose packaging of parenterals has furnished a broad background of technical data for meeting exacting closure and container requirements as well as physical and chemical characteristics of essential packaging materials—all of which data have proved useful in perfecting the syringe packages.

For example, it was through experience with rubber materials for the diaphragms on multiple-dose containers to maintain a seal despite repeated piercing by hypodermic needles that the self-resealing property of Neoprene or rubber was discovered —a characteristic that is essential to self sealing around a disposable needle in a throw-away syringe. Much valuable information has been obtained also about the chemical reaction of closure materials to product characteristics—such as accelerating the migration of plasticizers when the plastics come in contact with certain solvents for aqueous or oil-based injectable formulations. Conversely, much has been learned concerning the effect of packaging materials on products.

*See "Medical Packs Help Reduce War Casualties," MODERN PACKAGING, Aug., 1943, p 51.



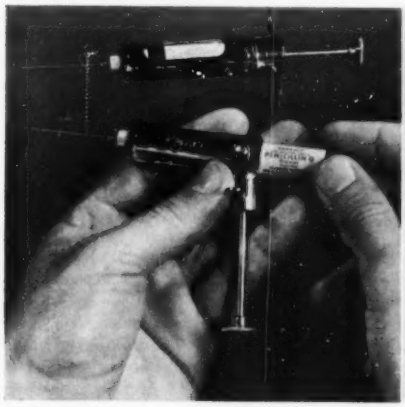
PRECISION FILLING and closure of miniature single-dose glass cartridges for the Pfizer Steraject syringe is largely a mechanized operation. However, it looks like a manual job because the employees who inspect and make minor adjustments in the unit are seated so close together along this toy-sized filling line.

Cartridge-loaded syringe

A logical variation of the standard physician's hypodermic syringe is the modern cartridge-loaded syringe, consisting of a metal frame and plunger assembly for use with glass cartridges and separately packed needles. This type of unit was first introduced for wide medical adoption by Wyeth, Inc., Philadelphia, under the trade name of Tubex. A recent example is the Steraject syringe and cartridges adopted last summer by Chas. Pfizer & Co., Brooklyn, N. Y.

The Steraject is a precision-built, stainless-steel device in which the physician places a glass, single-dose cartridge. The open-end glass vials are sealed at the end by a Neoprene plug and at the finish by an aluminum-collared Neoprene diaphragm. To use a Steraject unit, the physician first installs a sterile disposable needle from a tear-open sterile foil package supplied with each dose. Then he slides the glass Steraject cartridge into the syringe. As the cartridge is

PHOTOS THIS PAGE, CHAS. PFIZER & CO., INC.



BREECH-LOADING syringe like the Pfizer Steraject (left) introduced last summer illustrates successful departure from old-style syringes that had to be taken apart, cleaned, sterilized, re-assembled and reloaded between injections. This syringe uses sealed cartridges ready for use and disposable needles in sterile foil tear-pack.

POCKET KIT for doctor holds the Steraject syringe, disposable needles in individual foil envelopes and the Steraject 1- and 2-cc. cartridges of various injectable medicines.

PRESSURE-PACKED dose in glass vial of Ampin disposable syringe is dispensed automatically when neck of vial is broken. Tube connecting vial with needle has filter to trap glass fragments.

PHOTO, THE UPJOHN CO.

POLYSTYRENE disposable syringe used by Upjohn Co. has an acrylic needle guard and carries dose of penicillin in glass cartridge. Clear plastic box used as package for syringe and cartridge makes it easy for doctor, loading his bag, to be sure package contains the complete assembly.

pushed into the syringe, the pointed butt of the needle pierces the Neoprene diaphragm closure which seals itself tightly around the needle. The plunger of the syringe engages with a small brass threaded stud embedded in the Neoprene cartridge plug. Pressure on the plunger pushes the rubber plug into the cartridge like a piston, forcing the drug out through the hollow needle.

The chief advantage claimed by Pfizer for Steraject over similar cartridge syringes on the market is versatility.

The Steraject unit will take either the standard 1-cc. cartridges or the new 2-cc. Pfizer units introduced along with the new syringe. The larger cartridge size permits physicians to inject such massive doses as 1,000,000 units of Penicillin G Procaine in aqueous suspension or 1-gm. injections of streptomycin solutions in a single shot. Attempting to cram a million units of penicillin into a 1-cc. cartridge would produce a dose the consistency of putty; slightly less potent doses would be injectable, but would be syringeable only with a frighteningly high-calibre needle. (The use of two smaller cartridges in quick succession is apparently an unattractive solution. Doctors prefer to puncture the patient as few times as necessary.)

Disposable complete units

One of the simplest containers ever devised for the packaging of a single-dose quantity of an injectable is the glass vial, flame sealed at one end. All problems of closure material or finish dimensions are eliminated and if head-space air is replaced with an inert gas before the neck of the vial is fused, the all-glass container gives perfect protection. Constant improvements have been made in design to minimize glass fragmentation and to provide an easy, clean break of the neck when a glass ampoule is opened.

The principle of the flame-sealed glass ampoule is incorporated by Strong-Cobb & Co., Cleveland, manufacturing chemists, in the design of the company's Ampin, single-dose disposable syringe which the firm itself manufactures. An Ampin is simply a special drawn-glass ampoule with its neck enclosed in a flexible connecting tube of pure latex. Tightly fitted into the other end of the latex tube is the hub of a stainless-steel hollow needle. The flexible tube also contains a small filter.

The dose in an Ampin ampoule is packed with liberal head space filled with an inert gas under pressure. When the needle is inserted into the tissues and held firmly, while the thin neck of the ampoule is snapped between the fingers, pressure of the head-space gas forces the dose out of the ampoule, through the latex tube and filter, and through the needle into the tissues. The filter traps any fragments of glass from the snapped neck of the glass ampoule. Fill of an Ampin is slightly over the nominal dose, to account for whatever portion of the fill commonly remains in the filter and the tube.

Strong-Cobb uses its Ampins for 1-cc. quantities of vitamin B-12, penicillin products and for an assortment of narcotics and analgesics. Ampins were officially approved and adopted by the Medical Departments of the U. S. Forces during World War II and a special Ampin of Atropine Sulfate is recommended as emergency treatment for nerve-gas poisoning by the new Civil Defense Manual (AG 11-1).

E. R. Squibb & Sons, New York, and The Upjohn Co., Kalamazoo, Mich., have adopted versions of a clear polystyrene disposable syringe

which carries its dose in a sliding glass cartridge meant only for use in this type of syringe. Closure of the glass cartridge in both cases is effected by rubber plungers—actually piston-like plugs with raised ribs serving the piston-ring function of preserving an airtight and leakproof, shakeproof, but movable seal.

Upjohn's syringes for the company's Depo Penicillin, 300,000 units (Procaine Penicillin G in Oil) is equipped with a glass cartridge resembling a length of glass tubing divided midway by a transverse glass bulkhead. The dose is sealed into half the cartridge between the glass barrier and a rubber or Neoprene stopper.

When the cartridge is inserted into the polystyrene syringe, dose end first, the empty open half of the cartridge projects. A rubber thumb pad is provided to slip over this open end. Pressure against this pad first brings the cartridge's rubber sealing plug into contact with the sharp back end of the needle, which pierces a thin center section of the plug to connect the needle with the dose. The needle may then be inserted into the tissues at the injection site.

Further pressure brings the rubber stopper up against an inner plastic sleeve surrounding the needle, so that the rubber plug is forced back into the cartridge. This creates the pressure which forces the dose out through the needle channel.

Squibb's syringe package, though basically similar to the Upjohn device in its use of a glass tubular cartridge and polystyrene syringe with fixed needle, is somewhat different in design and action, and has two models.

Squibb's Unimatic disposable-syringe package for Squibb Procaine Penicillin G in aqueous suspension, 300,000 units, for example, is provided assembled. The Unimatic cartridge is simply a length of precision glass-vial tubing in which the dose is held between two rubber plugs. One plug is a fixed end closure with a piercable center; the other is a slippable piston. To use the Unimatic unit, the physician first removes the acrylic plastic needle guard and inserts it into the open end of the cartridge, where its tip seats in a slot in the rubber piston. The needle guard thus serves as a plunger rod and by pressing on it the user pushes the whole cartridge down until the needle end, projecting inside the syringe barrel, pierces the cartridge's lower fixed stopper. The needle is then inserted into the injection site. Further pressure on the plunger forces the cartridge to the bottom of the barrel and shoves the slippable plug down into the cartridge to eject the dose.

A more complex version of this syringe, Squibb's Duomatic, has been introduced to hold those drugs which are not stable in aqueous suspension or solution, or in oil, but must be stored as a dry powder until shortly before use. The Duomatic cartridge also resembles a simple length of glass tubing, but at a point midway along its length there is a small longitudinal by-pass channel molded in the cartridge wall. The fill is in two sections, solution and dry powder, separated by a middle stopper similar to the slippable end stopper. The physician first pushes against a short plunger rod which advances the whole cartridge far enough to run the end stopper through with the needle butt and also advances the liquid portion of the dose so that it reaches the by-pass in the cartridge wall. The liquid is thus free to begin flowing through the by-pass around the middle stopper and into the powder.

The short plunger has at this point served its function and is discarded. Its carefully calculated length avoids the danger that the user will initially push the liquid portion of the dose past the by-pass too rapidly. The needle guard is used as a long plunger rod to force the rest of the liquid through the by-pass until the first and second plungers are together and all liquid is in the powder chamber. Continued pressure at this point forces the now completely dissolved powder and solvent mixture through the needle.

The technical developments in materials and loading techniques for this kind of packaging must be largely guessed at. However, it is obvious that the rubber plug, natural or synthetic, must serve as a slippable but perfectly sterile closure. Glass tubing of a high degree of dimensional precision is also an apparent necessity. Chemical-vapor sterlization techniques are used for the plastic parts. The supplier of these tubes and syringes has long been a leading name in the manufacture of glass syringes.

Drugs in plastics

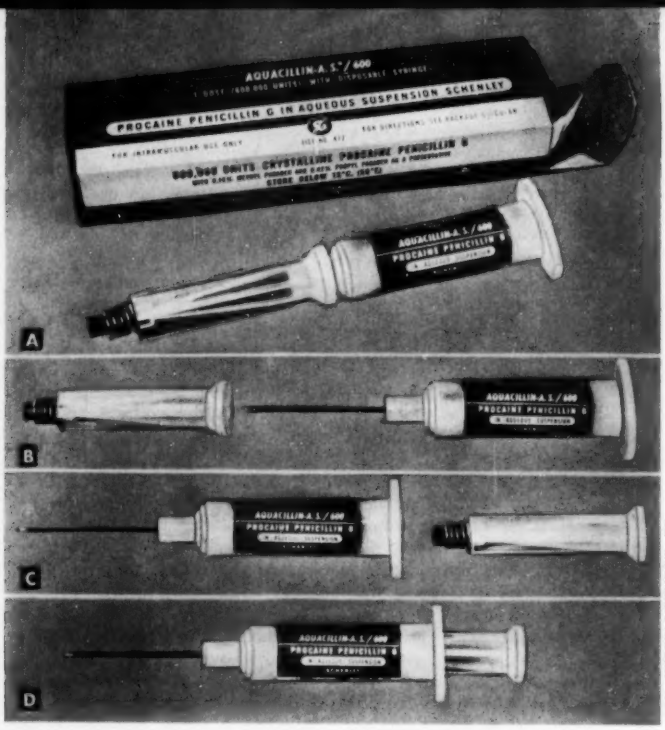
Prior to 1951 the only permissable containers for injectables were glass. In that year exhaustive clinical evaluation studies and field trial reports were submitted to the Federal Food & Drug Administration, which resulted in amending the glass-only rule to permit packaging in specified polyethylene containers. It is premature to say that all injectables could be successfully packaged in this material, but studies are said to indicate that a majority of the present known injectables will be compatible.

Since this ruling, major U. S. pharmaceutical houses have adopted versions of a successful all-polyethylene disposable syringe. The Upjohn Co. uses one model for its package of 300,000 units of Diurnal-Penicillin Redimixed. Bristol Laboratories, Inc., Syracuse, N. Y., uses one for a 600,000-unit Brist-O-Matic package of its Flo-Cillin Aqueous. Schenley Laboratories, Lawrenceburg, Ind., uses a larger model for its Aquacillin-A. S. packages of 600,000 and 1,000,000 units of Procaine Penicillin G in Aqueous Suspension Schenley. At least two other major pharmaceutical houses are reported about ready to introduce products packaged in disposable syringes of this same family. Both aqueous solutions and oil suspensions of drugs are currently being packaged in the polyethylene units.

The basic design of the syringes is simple—merely a barrel with an oval flange at its open end (for a thumb pad) and the other end constricted

FORERUNNER of things to come may be this new miniature polyethylene squeezable syringe. It is a self-contained and disposable unit package for giving local anesthetic.

PHOTO, BY POST.



POLYETHYLENE syringe used by Schenley Laboratories for penicillin has no inner cartridge, but carries the dose right in the barrel of the syringe. (A) Syringe is packaged in a carton. (B) For use, guard is removed from sterile needle and (C and D) used as plunger rod. Threads on tip of needle guard fit into threaded recess in sliding rubber or Neoprene stopper which seals dose.

where the needle is locked into an integral polyethylene boss. A finned needle guard or sleeve makes a tight sterile seal around the needle boss and carries a rubber insert at its end into which the needle tip is embedded. This seals the needle tip. The other seal for the dose is a double-flanged rubber or Neoprene movable plug which is inserted in the open end of the syringe barrel.

To use the syringe the physician pulls off the needle guard and screws its threaded tip into a socket in the rubber plug. The needle guard serves as a plunger rod and the physician has only to select the site, insert the needle and press to eject. The whole process has been clocked at four seconds. These syringes are also available to packagers in models with fitments for standard or special needles and in sizes up to 10-cc. capacity for veterinary work. Two-stage units to hold dry drugs and diluents are also said to be available to packagers.

These syringes are injection molded of polyethylene (20,000 molecular weight). An additive property, processed with the raw polyethylene granules, provides the stability necessary for mechanical function.

Important among its mechanical functions is the ability of the plastic to maintain hoop tension on the needle without loss over a period in excess of two years. The needle is a standard-type hypodermic of stainless steel. Rubber or Neoprene sliding stoppers are of a special formulation and it is claimed that performance requirements with polyethylene are different from those with glass.

Procedures for sterilization and filling, worked out cooperatively between the syringe supplier and individual users in the users' plants, include vapor-vacuum sterilization with either formaldehyde or ethylene oxide, said to be "quite simple," inexpensive and to provide 100% bacteriological sterility of the polyethylene units as well as of their component parts.

Filling of the unit is said to require only minor adjustments on standard filling equipment. The syringe package is reported to be completely contamination-proof and is said to be almost unbreakable.

Aspiration

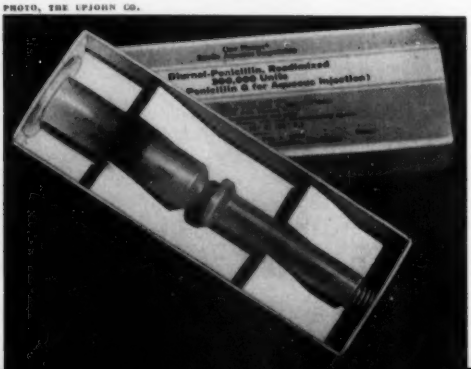
Aspiration (creating a vacuum in a syringe to determine whether or not the needle has found a blood vessel) is a necessity for most parenteral devices because the desired site is in muscle tissue. Any syringe must permit the user to create this suction while watching for the appearance of blood at the inner end of the needle. If blood appears, another site must be selected.

The packages described here all make provision for aspiration before injection.

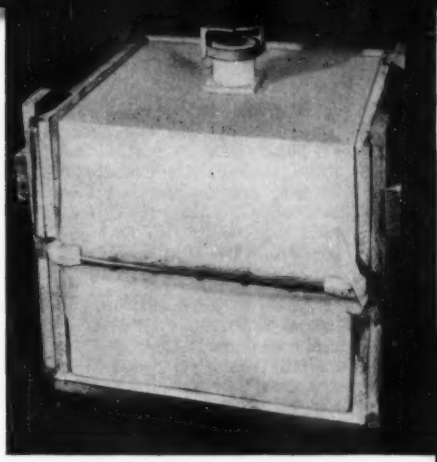
Because aspiration must always be done with the needle fully inserted in the patient at the actual injection site, it must be mechanically a simple, easy, positive (and visible) process that can be carried out without jerking or wagging the needle. After aspiration it should be possible to complete the injection immediately, preferably without further assembly or adjustment of the syringe. The aspiration requirement has complicated disposable-syringe design problems considerably because even a

(This article continued on page 177)

PHOTO, THE UPJOHN CO.



IN 4½ SECONDS one of these polyethylene single-dose syringes can be ready for application to the injection site. Appearance and visibility of the contents is served by labeling applied directly to polyethylene itself.



NON-BREAKABLE 15-gal. square carboy consists of molded polyethylene liner and snug-fitting wooden shipper. Two halves of liner are molded separately, then welded at center with steel-bar reinforcement. Heat-sealed apron of polyethylene film protects the metal reinforcements from any contact with spilled acid.

PRACTICAL BOX SHAPE requires less storage space, handles and palletizes better, carries more payload per shipment. Side slats serve as handles.

Square for acids

Boxed-shaped polyethylene carboy holds 15 gal. with maximum utilization of shipping and storage space

Polyethylene, which has enjoyed so many successes in consumer-type packaging, is now coming on fast in industrial packaging. A notable advance was the introduction, early in 1952, of 6¾- and 13-gal. blow-molded, round polyethylene bottles that immediately attracted much interest as shipping containers for hydrofluoric acid.*

A quite different version is a new box-shaped 15-gal. polyethylene container that Tennessee Products and Chemicals Corp., Nashville, Tenn., has developed and is using for shipments of muriatic acid and other hard-to-handle chemicals. The complete carboy consists of the polyethylene inner container and a wood shipping box. The Bureau of Explosives has tested the container and is granting temporary permits to shippers. Rulings from the various regulatory authorities should be forthcoming at a future date.

The new type of carboy is designed to offer a number of advantages. Because of its cubical shape, it can be stacked five or more containers high for palletizing or shipment. At the same time, its space-saving shape permits greater payload. Its light weight makes for easier handling and reduced shipping charges. It is, of course, highly inert to many chemicals and is non-breakable. These properties recommmend it for both domestic and export shipment. A detachable polyethylene pouring spout is reversed inside the container during shipment.

The dimensions of the polyethylene liner are 16⅝ by 16⅝ in. Depth is 15⅝ in. Weight of the liner is 12 to 13 lbs. Weight of the complete carboy–liner and wood box–is 35 to 36 lbs. Dimensions of the complete package are 20⅝ by 18⅝ in.; depth is 20⅝ in. Over-all space displacement is 4.2 cu. ft.

Construction

The polyethylene liner has a uniform wall thickness of ⅛ in. It is molded in two half sections, which are joined into a unit by heat sealing the flanged edges of the two halves. This seal is reinforced with a bolted-together steel edging that completely rims the four sides of the container to form a permanent mechanical seam.

The half sections, from which the complete liner is made, are molded under 11,000 p.s.i. and are claimed to be the largest molded polyethylene parts yet made. The very high molding pressure is intended to compress the molecules, thus achieving greater strength and at the same time reducing permeability.

The wood shipping cases are made of ¾-in. wood reinforced with triple-coated, acid-resistant steel strapping. Wood slats on the sides of the case provide convenient handles. The top of the case has a recessed construction that protects the cap of the bottle and permits nesting of the container stacked on top of it.

An acid-proof plastic collar screws down over the neck of the liner, holding the neck and top of the liner firmly in position against the wood case. This also facilitates complete drainage of the contents of the liner.

CREDITS: *"Karbox" shipping container assembled and supplied by Chemical Containers Co., Inc., 141 Logan Ave., Jersey City, N. J., using Du Pont and Bakelite polyethylene molded by A. L. Hyde, Glenloch, N. J.*

* See "Polyethylene Carboy," MODERN PACKAGING, May, 1952, p. 216.

PACKAGING PAGEANT

1 This Imperial decanter used by Hiram Walker & Sons, Ltd., Walkerville, Ont., won an award in the recent Canadian Consumer Package Competition sponsored by the Packaging Assn. of Canada as best in the alcoholic, non-alcoholic and non-medicinal bottled beverages classification. Design, William Rowe; bottle, Dominion Glass Co., Ltd.; cap, Anchor Cap Enclosure; cellulose band, Armstrong Cork Co., Ltd.; label, Curtis Co.—all of Canada.

2 Heavy polyethylene pouches offer corrosion protection for Ledex rotary solenoids and selector switches produced by G. H. Leland, Inc. The pouch is printed with company name, yet provides full visibility of product. Pouch, Shellmar Products Corp., Mt. Vernon, Ohio.

3 Tropical fish are being flown by H. Woolf & Sons from Florida to Eastern distributors swimming inside a new type of telescoping shipping container with a one-piece inner sleeve of waterproof corrugated that forms a "tank." Holes punched through the top permit a rubber "snorkel" tube to be inserted in the water to assure adequate oxygen for the fish. The new container saves 500 lbs. per plane load; thus the same quantity of fish requires fewer shipments. Container, Gaylord Container Corp., St. Louis, Mo.

4 A new idea for handling samples is suggested by this formed acetate display stand holding a regular-sized bottle of Lentheric's Clean Up skin cleaner with a sample-sized bottle of Night Work lotion, or a regular-sized Night Work bottle with a sample size of Clean Up. Both bottles fit tightly in the acetate stand. Bottles, Plax Corp., Hartford, Conn. Display, Plaxall, Inc., Long Island City, N. Y.

5 A handy new package for a purse spare of nylons is Kays-Newport's "Mini-Pak"—a tiny, one-piece scored and printed acetate folding box, sealed with pressure-sensitive tape. A heat-sealed end label gives size and color. Hose are shipped in bulk to the box maker for packaging. Folding acetate box, Shaw Randall Co., Inc., Pawtucket, R. I., using Monsanto's Vuepak F acetate.

6 Transparent polyethylene plastic bags maintain these three low-cost toys made by Sani-Speed Mfg. Co. in sanitary condition while reducing breakage and pilferage loss. Sharp edges of the toys do not pierce this tough plastic film. The bag for Playcraft beads has two compartments, the upper one for beads and the lower one for smaller pieces. All three bags have identifying paperboard headers. Bags, Mehl Mfg. Co., Div. Sydney-Thomas Corp., Cincinnati.

7 Sales of its "Old Style" bread are reported by the Jacob Laub Baking Co. to have jumped 23% since this colorfully designed new red, white and blue printed cellophane package replaced the former plain cellophane and printed paper-band combination. At the same time, returns since the introduction of the new wrap are reported to have been reduced from 750 to less than 60 loaves per week. Wrap, The Dobeckmun Co., Cleveland, Ohio.

8 Heat-sealed polyethylene-lined paper bags give the protection needed for the Plastic Molders Supply Co.'s colorants, a highly refined and finely ground product for use by the plastics industry. The bags are siftproof, moistureproof, easy to handle and use, and require minimum storage space. Bags, Union Bag & Paper Corp., New York.

9 Flavor-Kist Bleu Cheese Crackers now come in a package that looks like a block of bleu cheese. A reproduction of several of the golden crackers appears against the cheese design. A full-color photographic reproduction of bleu cheese on the printed cellophane wrapper can be spotted 10 yds. away. Design, Charles Akers, Chicago. Wrap, Milprint, Inc., Milwaukee, Wis.

10 The package design theme for Fieldcrest Mills' new "Trend" bedspread is taken from the pattern of the spread itself. Repeated on the box cover is the Greek Key motif in gray on a white ground. At the bottom of the cover appears the Fieldcrest name. The two-piece corrugated folding box protects the merchandise in shipment and is a home-storage box. Box, Hankins Container Co., Cleveland.

Just 20 years ago Harry Holmes of the mail-order fruit firm of Harry & David, Inc., made a trip from Medford, Ore., to New York City and pioneered a business which today brings more than 10 million dollars a year into the coffers of Western shippers of gift fruit packages.

About a million gift fruit packages now go out each year from the Holmes family's Southern Oregon Bear Creek orchards alone and better than a million more are shipped by other Pacific Coast commercial fruit growers, most of whom have followed Bear Creek's lead into a specialized market for their top-quality fresh fruit. It is a market with highly developed advertising and packaging techniques that mark a considerable advance over the gift-by-mail business which small fruit and nut growers and fruit processors had been carrying on as a kind of farmyard-to-kitchen industry for several decades.

Harry Holmes went to New York in 1932 to find a new market for the comice pears which he and his brother David were growing in their orchards. Previously Europe and Cuba had been their market, but growing world-wide economic and political unrest had cut severely into exports. Little known in this country, the comice pear was prized as a delicacy abroad. Its superior quality plus its comparative rarity (its commercial production in this country is confined to two small Western valleys) seemed to the Holmes brothers to make it a natural for a gift market. Harry Holmes took a number of boxes of Bear Creek's best to New York and sent them around to 10 of the country's leading business executives, pointing out their desirability as gifts. He returned to Southern Oregon with orders for more than 450 gift boxes to be sent from Bear Creek orchards.

Today the comice pears of Oregon's Rogue River Valley (home of Bear Creek) and California's Santa Clara Valley still make up the major portion of the gift-packaged, fruit-by-mail business, but many other seasonal fruits have been added and many non-perishable specialties as well. Catalogues list apples, peaches, grapes, plums, nectarines, oranges,

Harry & David started the trend; now it is a multi-million-dollar business with highly developed packaging techniques

Basic containers

VOLUME ITEMS are one-and two-layer boxes priced at $3 and $6 postpaid. Harry & David's box with gold-colored foil curtain and foil-wrapped pears is ultimate in eye appeal.

REGIONAL ORIGIN often features exterior decoration. Franciscan box shows California Mission, map of area where fruit is grown.

grapefruit, fruit cakes, jams, preserves, dried fruits, glacé fruits, nuts and a variety of other items.

Broadening the list of products handled has allowed development of year-around gift "clubs" which spread the business beyond the holiday season when, however, around 75% of the packages still are shipped. Broadening the list has also made for an increase in complications of merchandising. Again led by Harry & David, year-around shippers buy many of their products from other growers and processors.

Mission Pak of Los Angeles, the only large gift shipper which antedates Harry & David (by 15 years), started shipping mainly Southern California processed fruits and fresh citrus fruits, later adding other fresh fruits. Mission Pak and a few others bolster their mail-order sales by holiday-time retail selling in stores, but Railway Express and U. S. parcel post deliveries still account for all but a negligible portion of the total business.

Packaging requirements

The 450-odd wooden boxes that Bear Creek Orchards sent out in 1932 are a far cry from the refined packages which the company, re-named Harry & David, Inc., sends out today. Skillful merchandisers, the brothers

PHOTOGENIC packages are imperative, since almost all orders are placed from colorful photographs in the mail-order catalog. Gift baskets present difficult packing and shipping problems, but their popularity warrants grappling with them.

"EXECUTIVE BASKET" is the name given to this pack put out by Day & Young. This assortment is designed to be presented as a business gift.

are fibreboard boxes

SCENE in Oregon's Cascade Mountains decorates Pinnacle Orchards' box, shown with two wood excelsior pads for top and bottom to protect fruit. A printed curtain covers all. Decorations on tray sides show when box is open.

STYLIZED DESIGN characterizes smart-looking box for Myron Foster's Hesperian Orchards, near Lake Chelan, Wash. Note simplicity of the design.

NOVELTY PACKS attract attention in the catalogs and encourage new orders from recipients. Pinnacle Orchards' cherrywood bowl resting on wheelbarrow comes complete with salad fork and spoon.

"TOWER OF TREATS" put out by Harry & David consists of five red and white boxes of varying sizes tied together with satin bow and sprig of holly. Pack contains candy, dried figs, processed plums, apples, Royal Riviera pears.

recognized immediately the need for special presentation of their fruit. Throughout the firm's history, major efforts have been devoted to package development and it pioneered and set the pattern for the industry.

Packaging requirements for mail-order fruit gifts are highly specialized. Basically, the package must protect the fruit in transit against damage and pilferage. This is important to the industry, for all shippers guarantee safe arrival, knowing that their future market depends upon recipient satisfaction. The package must, in addition, be easy to open.

Development of visual appeal is the requirement on which most time and effort is spent. Ordinary "shelf appeal" is of no importance in a package which is purchased by mail. Its exterior appearance should be attractive, but that is subordinate to its appearance when opened. The open box and the basket or novelty fruit holder divested of its shipping carton are of first importance in gift-by-mail packaging.

Almost all orders are placed from mailing pieces which present attractive and clear color photographs of the packages just as they will look when opened. The photogenic quality of the package is the main and usually the sole salesman.

Since the fruit is a quality product, the packaging also should have the kind of finished appearance which gives an immediate impression of quality.

To fulfill these primary requirements, packaging must be fairly expensive. A box alone for a typical item selling for $7.50 costs 65 cents. Various packers estimate that their packaging materials account for from 10 to 20% of their total costs.

The basic container for gift-fruit packages is the corrugated fibreboard box, although a few packers use specially designed wooden boxes. All find that most of their volume comes from the least expensive items in their catalogues—one- and two-layer boxes of fruit priced between $3 and $6 postpaid.

Pinnacle Orchards' one-layer box is typical, a corrugated fibreboard full-telescope box with roll end, roll side tray and roll side top. Printed in two colors, brown and green, it carries decorations on the tray sides which show when the box is open. Since both ends and sides of the tray are rolled, no raw edges are visible.

In packing the box, a wood excelsior pad is placed on the bottom, then a layer of green shredded waxed paper upon which the fruit is placed in a diagonal pattern. Some of the fruit is wrapped, some unwrapped, to accentuate the pattern. On top of the fruit goes a decorative paper curtain, covered with another protective excelsior pad. The box cover is fastened with one staple at each end of the box. Printed directions read: "To open pry up staples on each end of container."

The exterior decoration features a scene in Oregon's Cascade Mountains, near Pinnacle Orchards. Like most other shippers, Pinnacle stresses in its packaging the regional origin of the products. Myron Foster's Hesperian Orchards box of the same type carries a view of Lake Chelan, Wash. The Root family's Crater Lake Orchards box carries a colored view of that natural wonder. Sweetbrier Orchards in the Santa Clara Valley markets its gift packages under the name Franciscan Pears and features a picture of a California mission on one of its boxes and a pictorial map of its section of California on another. These are in some contrast to Harry & David, Inc., which characterizes its present packaging style as "Fifth Avenue," but maintains a regional flavor through advertisements and package enclosures written in rustic, homespun terms.

Harry & David's lowest-priced box is similar to Pinnacle's but more sophisticated in appearance. Tray sides are solid colors and the exterior design features diagonal stripes. A gold-colored insert frames the fruit and two pears are wrapped in gold paper.

Most common other types of corrugated fibreboard boxes are those with shallow tops, shipped in corrugated-board sleeves and hinge-back boxes.

Mission Pak uses shallow wooden

boxes with paper end labels for fresh fruit and avocados. Snow Mountain Orchard uses carefully finished ponderosa pine boxes with sliding lids for its Yakima, Wash., "Snow King" apples and pears.

Baskets

Gift baskets present more difficult packing and shipping problems, although their popularity appears to warrant grappling with them. Patterned after the tried and true steamer basket, they make a more showy gift than box-packed items. They usually include nuts, dried fruits and candies, as well as fresh fruit, and range in price from around $10 to more than $25, although Hesperian offers a 45-lb. hamper for $48.50. These make popular business gifts. Day & Young, which gift packs Santa Clara Valley comice pears under the name Buttersweet, calls its basket the "Executive."

Preparation for Harry & David's "Royal Gift Baskets" is the most elaborate of any shipper's and begins months in advance of the actual packing. Each January a basket factory is set up in one of the Bear Creek Orchards' buildings, staffed by a group of local women who have been taught basket craft over a period of years. By July they have completed a stock of some 80,000 baskets, made of reed and twisted paper on wooden bases. Early in autumn the task of preparing decorations is begun. Bows are tied, candy rosettes prepared, wax flowers and plastic leaves twisted together. By November, when actual packing is started, all basket inclusions are ready to go down an assembly line to the packers. A hollow papier-mâché cone, developed by Glenn Harrison of Harry & David, Inc., facilitates packing. First filled with fruit, the cone is turned right side up against the basket bottom. The remainder of the fruit and other items are fitted into its preformed hollows. With everything in place, cellophane is drawn tight over the mound and colored netting tied over that. For shipping, the baskets are placed in corrugated fibreboard regular slotted containers, braced against wooden inserts to prevent motion.

Novelty packages

There is a variety of novelty packages available. Irregularly shaped, like the baskets, they present essentially the same problems. Similarly skilled packers must do similarly precise and complicated work in assembling them and they must be carefully placed in cartons for shipping.

Pinnacle offers a fruit-and-nut-filled cherrywood salad bowl on a wheelbarrow, plus a salad fork and spoon for $14.95 and a wooden harvest cart for $10.95. Mission Pak has a similar Mexican carretta for $9.98. Harry & David has a lazy Susan and a double-decked compote for $15.95 and $9.95, respectively.

A box novelty is Harry & David's "Tower of Treats," which consists of five red and white boxes of varying sizes tied together with a broad satin ribbon and embellished with a holly sprig. In the boxes are candy, dried figs, processed plums, apples and Royal Riviera pears. (In the process of glamorizing Bear Creek Orchards' gift comice pears, the top 10% of the crop, the firm has renamed them Royal Riviera and registered the name.)

Many other types of packages are used also for items handled in smaller volume. Jars of jams and preserves are packed in cartons with die-cut corrugated-board inserts. Some go into fibre cans. Nuts are packed in small burlap bags, plastic containers, jars and boxes. Grapes go into one type of newly developed box, cherries into another. All, if they are successful as gift-by-mail items, photograph appetizingly, so that the man or woman looking at the catalogue thinks, "I'd like that," or "Aunt Josephine would like that," or "My client would like that."

Catalogues and mailing lists

Catalogues are the practical salesmen of the fruit gift-by-mail business, but their effectiveness is overshadowed by the packages themselves. A high proportion—perhaps 33% of the people who receive gift packages—order them themselves later. Henry Andreas of Sanger, Calif., developed an attractive box for shipping the table grapes he grows. He sent a carton of four to a friend who worked for a large company. He was surprised when the head of the firm, who had seen the package by chance, ordered similar ones as gifts for company friends. He was still more surprised the following year when many of the recipients wrote asking if they could order them for themselves and *their* friends.

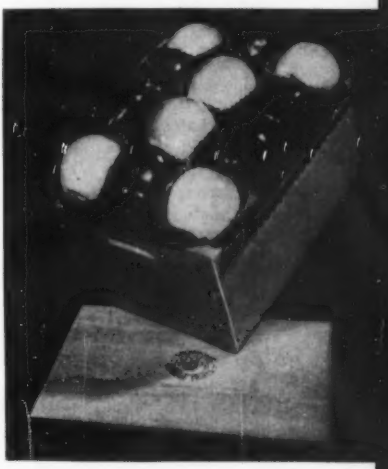
SPECIALTIES are packaged by a number of mail-order fruit houses. This appropriately decorated fibreboard box used by Pinnacle Orchards for five jars of preserves is a typical example. Each jar is carefully protected by specially designed corrugated paper inserts.

Without any kind of advertising, he has effortlessly developed a steady demand for his gift packs.

Crater Lake Orchards has a high percentage of orders each year from Pennsylvania. This was considered mysterious until one of the owners recalled that the father of a college fraternity brother had one year ordered a fairly large number of gift boxes sent to Pennsylvania friends and started the pyramiding. Most large

(This article continued on page 185)

RUSTIC WOOD boxes are used by some firms. Gift chest of ponderosa pine carries Snow Mountain Orchard's Washington State apples and pears. Yellow and red apples give a colorful effect to package.



ANNOUNCING A NEW FOR —Another

IN wrapping bacon or franks, it's important to have a tight package – one that *stays* tight.

But conventional packaging films stretch, sag and wrinkle when exposed too long to showcase moisture. And that often means spoilage, or expensive rewraps.

Now, the Goodyear Packaging Engineers have entered the picture with a revolutionary new film – 75 BF PLIOFILM – specially designed to meet every problem encountered in bacon and frank packaging. 75 BF PLIOFILM offers these worth-while advantages:

Insures a tight package that resists puckering and wrinkling.

Takes rough handling, virtually eliminates rewraps, because it affords a positive, film-to-film seal.

Greaseproof, no greasy packages to handle.

Air-moistureproof, preserves "hickory smokes" aroma and taste of bacon, retards sliming of frank packages.

Natural transparency shows product as it really is, without shine or glare.

And, best of all, with all its priceless advantages, this remarkable new film costs no more than other films.

Introduction of 75 BF PLIOFILM is another outstanding example of the Goodyear Packaging Engineer's ability to develop special films to meet special needs.

No matter how difficult or unusual your packaging problem, the GPE may be able to solve it with a PLIOFILM wrap designed especially for you. Why not write him at Goodyear, Pliofilm Dept., Akron 16, Ohio.

Pliofilm, a rubber hydrochloride – T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

Get to Know the Man Who Knows Your Problems

Let the GPE draw on his experience to help solve your packaging problems. He'll help design a PLIOFILM wrap that's tailor-made for your product. Write him today.

WRAP BACON AND FRANKS

PLIOFILM solution to a tough packaging problem!

COULD YOU USE THESE PLIOFILM ADVANTAGES?

IT'S STRONG!
PLIOFILM produce bags hold up to 10 pounds without danger of breakage.

IT'S LIQUIDPROOF!
PLIOFILM is so moisture-tight, leakageproof, it safely seals pickles, sauerkraut, in their own flavor-making brine.

IT KEEPS MOISTURE OUT!
Crackers, tablets and other hygroscopic products stay crisp and dry in PLIOFILM.

GOODYEAR
PACKAGING
FILM

Good things are better in

Pliofilm

3-way protection against air, moisture, liquids

We think you'll like "THE GREATEST STORY EVER TOLD"—every Sunday—ABC Radio Network THE GOODYEAR TELEVISION PLAYHOUSE—every other Sunday—NBC TV Network

Salesworthy

NOVEL MOUNTING gives this spool package its bookish look. Cellophane cylinder wrap provides perfect protection to thread, which is firmly positioned by die-cut forking. Copy and illustrations utilize all four sides of this "open" package for thread.

OPEN-END ENVELOPE affords maximum labeling area. There's a lot of information placed on both front and back. Color placement arrests the eye, while design arrangement guides it. Note the dimensions of product in the price block.

INSTANT IDENTIFICATION of the color and texture is provided by the little open window in this package. Product uses as well as capsule instructions are arranged to be taken in quickly by shopper.

If you ever want to store something valuable for a while and can't get to the vault, just drop it on a crowded notions counter and no one will ever find it. That's the way the average manufacturer of notions must feel as he considers his packaging problem.

Most notions are small and need special packaging if they are to attain visibility in their own right. But when crowded onto the counter of a low-price variety outlet, or into the bins of the department store's notion section, they become almost impossible to see. Low price, too, is a critical factor. Notions are for the most part tagged in cents rather than dollars and packaging must be inexpensive as well as functional and eye catching.

The David Traum Co., New York, which specializes in thermoplastic-coated mending products and name tapes, pressing aids and sewing notions, has paid special attention to these factors and has made significant progress. The company recently overhauled its entire packaging program and is still in the process of streamlining it.

The notions field is one of shifting emphasis. As styles change and as new fabrics, new processes and new convenience features are devised, different notions come into favor while old standbys sometimes drop out of the picture. This situation calls for strong company-name emphasis and a strong family feeling in a company's line if it is to retain the good will built up by a diversified line of useful notions and gadgets.

Traum had the problem of convincing retailers that it would pay them to turn over a certain spot on their counters for the Traum family, which most stores were scattering throughout the welter of items on their counters according to the nature of the individual item—Traum threads with other decorative sewing threads, Traum iron-on patches with competing patches and so on.

To unify its products for retailer and consumer alike was the basic objective and Traum thinks it is well on its way right now. The company made numerous field trips to various outlets in order to find out what typical notions counters were showing and how they were showing them. Some stores have self-service units, others have bar counters, still others have islands, while department stores may have a whole department for their notions.

Traum representatives studied the packages of other competing and

notions

Traum shows how to attract attention to small, low-cost items on notions counter

non-competing notions on these counters with the idea of designing a package that would have maximum visibility at point of purchase. A combination of black, yellow and white proved to be the answer on the question of color. When packaged in this combination, Traum's entire line of products jumped right out of the most crowded bins. The simple line drawings and brief copy had split-second visibility. Altogether, the combination proved to sell product and product application to the impulse buyer in record time.

With the new color scheme as a starting point, the company has tailored all its new items in black, white and yellow, working copy and illustration into as strong a family resemblance as possible. The maroon, gray and white of the denim-patches envelope was changed, as was the orange, blue and white of the corduroy patches. The handsome red, white and blue package recently designed for Traum's new ball-point laundry-marking pen and name-tape set was recast in the family color scheme and the Traum seam spreader—latest addition to the line—was also carded in black, yellow and white on printed paperboard.

The company had been stressing its products by function, in some cases completely subordinating the company name. Its Irontex line, for example, shows the company name only on the bottom side of the envelope. Now, however, company name will be stressed on all new items. In marketing a line of sock patches, which are also thermoplastic coated, Traum shows company name instead of the trademark "Irontex," although the sock patches are applied with a heated electric iron just like other Irontex products and are treated similarly with a thermoplastic coating.

A closer look at the individual packages might be particularly profitable for the manufacturer of gadget items. The company designs and puts together its own packages, which must satisfy the same requirements in different shapes, sizes and materials for completely different items.

For its Irontex mending-fabric pack, Traum uses a simple flap envelope of light-weight satin-finish paper stock. A simple line drawing shows a hand pressing an electric iron on a Traum patch which covers part of a skirt, thrown over an ironing board ready for the mending job. An arrow pointing to the hand carries the copy, "just iron on!" Since the company believes in giving a generous quantity of its specially treated and carefully designed materials, the quantity is noted in or near the price block to

(*This article continued on page 180*)

A COMPLETE VISIBILITY package is made from an oblong of light-weight paperboard folded down and stapled through a transparent film envelope. Surprise plus is the strength of this package for sock patches.

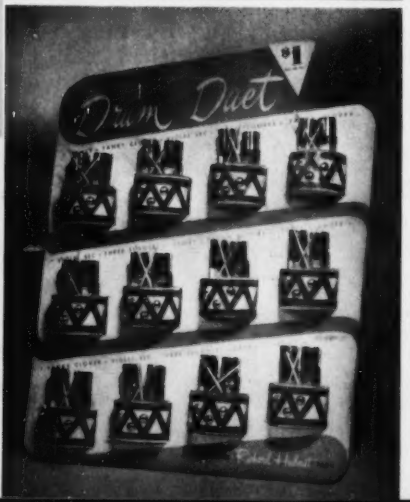
TRIPLING THE MARKET is the object of the three figures sketched at lower right of sew-in pocket package, showing that the product is suitable for ladies' slacks as well as boys' and men's trousers. The open-end envelope permits easy inspection.

Display Gallery

An eye catcher at Christmas time was this mobile display with dangling gift certificates and die-cut Champ hats. Front panel at the bottom of the lithographed paperboard unit helps sell related men's wear. Text in the large Christmas tree ornament reads "Headquarters for nationally advertised shirts . . . slacks . . . ties." Display Einson-Freeman Co., Inc., Long Island City, N. Y.

Two merchandisers for the Chesebrough Mfg. Co.'s Vaseline Lip Ice pomade sticks present the product in full view, easily accessible for self service. The step display for the 25-cent size is trapezoid shaped, with separate display card locked into the back. The 10-cent-size unit comes with an easel for counter use and a nail hole for hanging on a wall. Displays, Eastern States Cartons Div., Robert Gair Co., Inc., Brooklyn, N. Y.

Capehart-Farnsworth Corp. has introduced this unusual point-of-sale display that doubles as a salesman's sample carrying case, complete with handle. The compact display carton—only 14 by 15 by 17 in. in dimensions—holds five radios. Salesmen use it as a presentation case, then leave it with the dealer for use as a counter merchandiser. When unfolded into a display, it measures 60 in. wide, 35 in. high and 22 in. deep. Made of corrugated board faced with wood-grained paper, it weighs only 4½ lbs. Special die-cut inserts allow new models to replace old-model radios, giving the display longer life. Display, Berger-Amour, Chicago.



An actual Lord Calvert carton and bottle rest on this 12-in.-wide lithographed paperboard replica of an antique pine desk used by Calvert Distillers as a point-of-sale display for the Christmas gift season. Fastened on a "gold" chain at the right is a ballpoint pen for addressing gift cards stored in the rack at the back. Display, Einson-Freeman Co., Inc., Long Island City, N. Y.

Any four brands of Publicker Industries' Club Size liquor bottles may be displayed in this pilferproof counter merchandiser. Each bottle is locked into place by a neck strip and held in position by four round price markers. Weight of the bottles keeps the display solid and erect. The sunburst is printed in golden yellow. Background color is blue and lettering is in black and red. Display, National Advertising Mfg. Co., Philadelphia.

Twenty-five pounds of Hershey chocolate bars are in this giant-sized bag —an exact duplicate of the consumer-sized cellophane package of Hershey's miniature chocolate bars. The display piece is 4 ft. high, with a cardboard stove-pipe center completely hidden by the candy piled around it. The candy may be removed and sold separately when the display is no longer used. Display bag, Cheltenham (Pa.) Div., Lassiter Corp., Charlotte, N. C., using DuPont cellophane.

The Wildroot Co., Inc., merchandises three sizes of Lady Wildroot Shampoo in this new corrugated floor stand. Printed only in two colors on white board, the design gives the appearance of a multi-color job. Research proved that sales increased up to 40% when merchandise was properly displayed in this unit. Display, Hinde & Dauch Paper Co., Sandusky, Ohio.

Twelve of Richard Hudnut's Drum Duet packages fit into die-cut openings of this paperboard display. The $1 price of these polystyrene foam drum packages holding two different essences is prominently displayed at the top of the unit. Names of the essences available top each row of packages. Design, Summon & Summon, New York. Display, Latham Process Corp., New York. Drums (Dow's Styrofoam), Feder Industries, Inc., New York, and Frank Paper Co., Detroit.

Lanvin's purse-size flacon of My Sin perfume is displayed on cosmetic counters in this striking black acrylic plastic display. An opening in the riser part of the unit enables the flacon to stand upright on the base. The gold design and lettering are effective against the black background. Display, Arrow Mfg. Co., West New York, N. J., using DuPont Lucite.

Blow out the empty!

Strong air blast to eject empties and pass filled cartons is simple inspection device

A free stream of moving air properly applied can be one of the gentlest of all possible devices for exerting pressure on an object without, in effect, laying a finger on it. There are probably many opportunities in a variety of packaging operations where this touchless action could be utilized to advantage.

An application in which a stream of moving air performs an important package-inspection function at the end of an automatic cartoning line has been developed at the plant of the Arner Co., pharmaceutical manufacturers, of Buffalo, N.Y. The idea simply provides for a steady jet of air through which each completed, filled carton must pass as it comes off the cartoner's conveyor onto the case-loading table. Empties, cartons formed and closed with no jar or bottle inside, are blown off the table and into a bin when they hit the air jet, while properly loaded cartons, being much heavier, are unmoved by the air stream and go on to be packed into cases. This system has been found equally effective over a wide range of line speeds and capable of adjustment for various sizes, shapes and weights of cartons and contents.

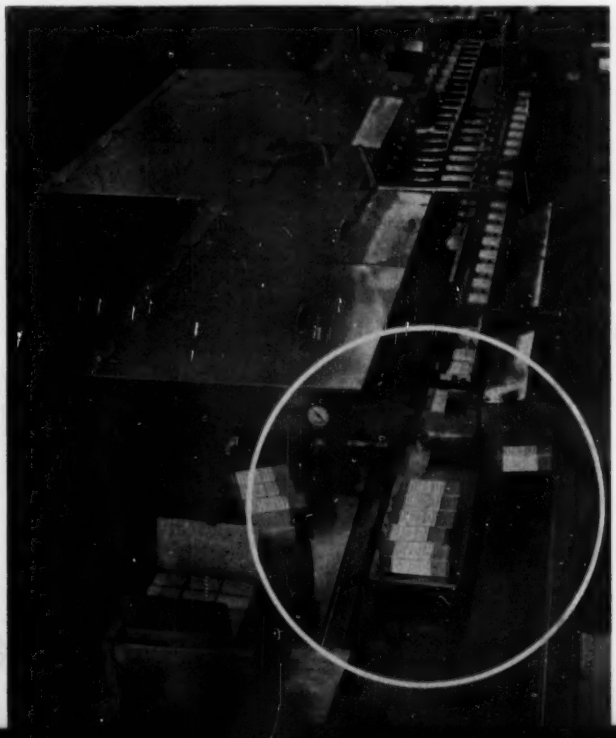
In spite of the great simplicity of the idea and of the equipment required to put it into effect, this air-pressure inspection-ejection device has solved for Arner the problem of inspecting the output of high-speed automatic cartoning equipment. The problem is serious, for as cartoner speeds increase, even a minute percentage of empties becomes a matter of concern in terms of customer inconvenience and chagrin. In daily operation at the company's plant, the air-pressure device has proved to be "a virtually infallible check" in contrast to human inspection which, even when most rigidly maintained, invariably lets a few empties slip through. The company reports unfilled-carton complaints almost entirely eliminated. Also eliminated is the need for one or more attendants assigned just to inspection; the air jet winnows out the perfect-looking empties and employees who do the case loading can easily spot and eliminate defective filled cartons.

Arner's device was developed by the company's machine-shop foreman, Paul Ulicky, who put it together from materials available in almost any plant's machine shop. It consists mostly of lengths of ¾-in. iron piping connected to a standard air-compressor unit. The pipe leads from the compressor to the desired station at the carton-discharge table, where the end of the pipe is securely supported by a simple bracket in such a manner that the stream of air from the end of the pipe is aimed at the point where cartons emerge from the cartoner.

There is no special nozzle, but mounted on the bracket which supports the end of the pipe is a standard petcock, to regulate the flow of air, and an air pressure gauge with a large, easily read dial. The dial is in view of employees working nearby and would warn of pressure failure even if cessation of the air-jet's hissing went unnoticed. The dial would also warn of an unexpected increase of pressure which might blow filled cartons off the line. It is worth noticing how this installation was worked out to locate the pipe, bracket and gauge in a sheltered spot, out of the way and yet highly visible.

Adjustment of the air stream, although it is in reality a sensitive operation requiring fairly precise accuracy, is usually done with a simple test on a filled and an unfilled carton at the beginning of each day's operation, or whenever the size of the carton being filled is changed. According to the company, the air-blast inspector-ejector works equally well at high, medium or low speeds.

CAUGHT IN THE ACT of blowing an empty carton off the case-loading table, the Arner company's simple air-jet inspection device infallibly rejects any unfilled cartons regardless of the rate of cartoning speed. The filled cartons don't budge.



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Here's another interesting example of how efficiently our machines meet the varied packaging requirements of our customers.

Kraft's one-pound package of Dairy-Fresh Caramels is produced by our Shell-Pakit machine from laminated printed cellophane in *economical roll form.* In the final sealing process the machine folds a red-and-yellow label over the top of the bag and seals it firmly on both sides. This label provides extra eye-catching display and a spot for pricing by the dealer — also makes it easier for the purchaser to lift the bag from the display rack or counter.

The small-size six-piece package is made by our Model CA-2 machine, which produces such a tight wrap that *no cardboard reinforcement is required.* The machine includes an easy-opening tape in the cellophane, placed near one end of the package — caramels can be removed without destroying the entire wrap.

KRAFT CHEESE CARTONS made by our Model PA Carton Forming Machines

With our PA Carton Forming Machine you can produce sturdy cartons from inexpensive die-cut blanks. Makes substantial savings over factory-made or hand-set-up cartons. Adaptable to many different types of cartons.

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PACKAGE MACHINERY COMPANY
SPRINGFIELD, MASSACHUSETTS

Ink rub test*

Joint Task Committee finds Sutherland instrument best for evaluation of folding cartons.

BY L. R. AYERS†

Three organizations concerned with the quality of package printing—the Packaging Institute, the Folding Paper Box Assn. of America and the National Assn. of Printing Ink Makers—have agreed on the use of a newly developed rub-test instrument which it is hoped will provide a recognized, standard test method for folding cartons. The following article incorporates the report of the Joint Task Committee, which has now been approved by all three organizations, and a description of the operation of the recommended instrument.

One of the use hazards encountered by all printing is the rubbing or scuffing of the printed surface. The degree of rub resistance required varies considerably with the nature of the printing, the type of material printed and the end use intended. Because in many cases even a small degree of ink rub will seriously detract from the appearance or serviceability of the material, methods for improving resistance are continually being sought.

Printing in the packaging field must encounter rub hazards greater than experienced in any other field. The first requirement of any package is to protect and hold its contents. As important as printing is in the packaging field in identifying the material packed, serving in many cases as part of sales appeal of the article, it must still be considered secondary to the primary protection function. This point of view only serves to emphasize the unusual rub hazards encountered for printed packaging materials.

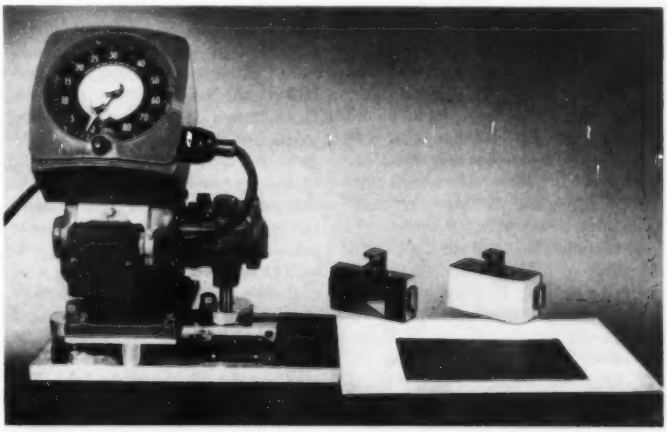
While it is certainly not new to discuss the rub and scuff hazard encountered in the packaging field by all printed materials, it is still a fact at the present time that no means of testing and evaluating rub resistance has gained general acceptance. A survey of means used for testing the rub resistance of printed packaging materials indicates that there is no generally accepted instrument for evaluating this important property. Therefore, it is not surprising to find a considerable degree of confusion.

Committee set-up

The work covered by this report was initiated and carried out with the intent of helping to standardize the testing and evaluation of rub resistance.

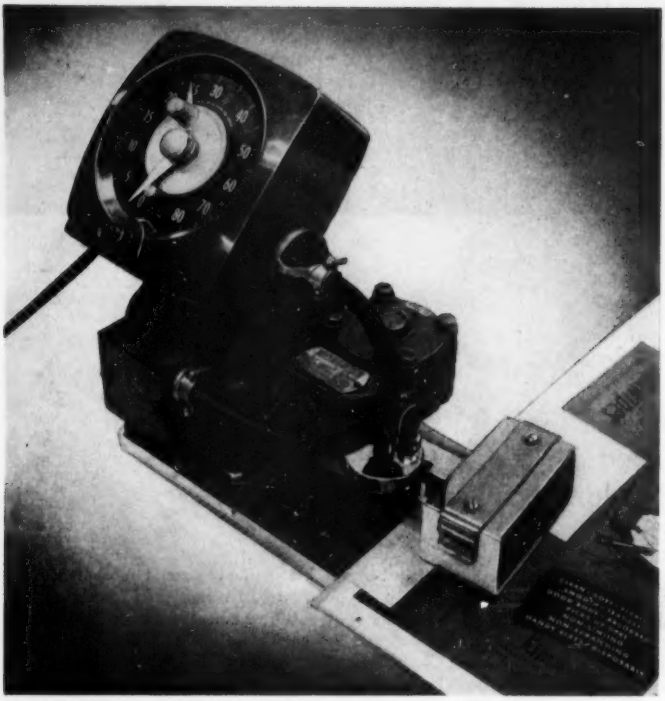
In view of the importance of the

EQUIPMENT for Sutherland test method: motor-driven unit with predeterminable setting for the number of rubs desired; a template; 2- and 4-lb. weights.



* Adapted from a paper, "Evaluating the Resistance of Printing Inks to Dry Rub," presented by the author before the 14th Annual Forum of the Packaging Institute, New York, Oct. 21, 1952, as a report of Sub-Committee No. 1 of the Printed Packaging Materials Committee.

† Laboratory manager, Gair Cartons Div., Robert Gair Co., Inc., Piermont, N. Y.



INSTRUMENT IN USE on folding-carton test specimen, with a test strip of same stock, unprinted, clipped to 4-lb. weight. The machine is set for 25 strokes.

rub problem, tentative plans had been made to study rub testing by a number of committees. In May, 1952, a number of the people interested in evaluating different rub-testing instruments and in establishing testing procedures became aware of the possibility that the various committees would be duplicating similar studies. It was decided to form a Joint Task Committee representing the Folding Paper Box Assn. of America, the Packaging Institute and the National Assn. of Printing Ink Makers, with two representatives of each of these organizations as active members, plus one advisory member for each of the three instruments under consideration, and with William D. Hall of FPBA as secretary.

The committee was set up with the writer as chairman and, as active members, Gordon Dalsemer of Lord Baltimore Press; Edward C. Berg of the Ace Carton Co.; E. H. Balkema of Colgate-Palmolive-Peet Co.; Frank W. Cray of Interchemical Corp., Printing Ink Division, and George L. Erikson of the Braden Sutphin Ink Co. Advisory members were Martin Galbraith of Sutherland Paper Co.; William C. Walker of National Printing Ink Research Institute and Lars Sjodahl for the Martinson Machine Co. A general program was undertaken for conducting a round-robin series of tests in order to evaluate the various rub-testing instruments.

During the early phase of this work it became clear to the committee that the scope of our investigation would need to be clearly defined. It was agreed that it was the purpose of the committee to investigate, test, evaluate and recommend to the cooperating organizations the designation of one or more instruments as being satisfactory for use in measuring the rub resistance of packaging materials.

It was further agreed that the instruments which should be studied were the Rubometer developed by the National Printing Ink Research Institute; the Sutherland Ink Rub Tester built by the Sutherland Paper Co.; and the mechanical rub tester built by the Martinson Machine Co. The committee was aware there were other instruments that might be included in such an investigation. However, it was mutually agreed that only power-driven instruments warranted serious consideration. Further, the three instruments which were to be included in the study were all known to be available for the group's investigation.

It was further agreed that it was not the purpose of this investigation to study the comparative qualities of ink, paperboard or other materials, but to limit the committee's work to the development of comparative test data that could be used to determine whether tests made by any or all of the three instruments are similar and comparable. A standard procedure would be established only for the purpose of conducting comparative tests on standardized samples and not necessarily because such a test procedure would be adopted by any or all of the cooperating organizations.

Briefly stated, it was the purpose of the committee to evaluate three existing test instruments from the standpoint of their suitability for evaluating rub resistance.

Because of the broad scope of the whole packaging problem and in view of the fact that the interest of the group was particularly centered in the folding carton field, it was agreed to evaluate the instruments only for folding-carton purposes. All results and conclusions reached by the committee should be viewed with this consideration in mind.

In the opinion of the committee, testing procedures for rub resistance should only establish the conditions for testing and not in any way attempt to establish acceptance limits. This is a point for agreement between those specifically concerned with an individual rub-testing specification and will differ considerably depending upon the nature of the particular carton and its end use.

While the committee feels that the flat rub test as studied in this program has a distinct place in the testing of folding cartons and is related to some of the use requirements encountered, flat rub is by no means the only factor which must be considered in actual use. For many cartons shipping hazards are encountered which cannot be accurately evaluated or predicted on the basis of only the

flat rub test. This precaution should be borne in mind in interpreting rub-test results.

Experimental work

The experimental work which served as a basis for the committee's conclusions was obtained by means of a round-robin series of tests. It was decided that there should be one testing station for each of the three organizations represented on the Task Committee. The selection of the testing station was made by each of the groups represented. The testing station for the Folding Paper Box Assn. of America was the Ace Carton Corp. in Chicago. Similarly, the testing station for the Technical Committee of the National Assn. of Printing Ink Makers was the New York Branch of the Printing Ink Division of the Interchemical Corp. Finally, the Robert Gair Co., Inc., at its Piermont Division, acted as the testing station for the Packaging Institute.

The testing procedure which was followed can be briefly outlined as follows: Duplicate packets of samples were prepared from typical samples of folding cartons. Each packet contained a diagram indicating the exact position in which the rub tests were to be made by each of the three instruments. Each sample was tested in triplicate at a number of test conditions. Sufficient additional specimens were included in each packet to allow for some spoilage. The printed samples included machine-coated board, white patent-coated and bleached manila-lined board. In all cases where unprinted board was to be rubbed against printed board, tests were made with each of the instruments for 10, 30 and 80 rubs. In cases where two printed surfaces were to be rubbed against each other, all tests were run for 80 rubs.

The actual operating procedures for each of the three testing instruments followed the recommendations of the manufacturers.

The test samples were conditioned in the room where the tests were to be run for a period of at least 24 hrs. before being tested and a record was kept of the temperature and humidity conditions during the actual testing period. A nominal weight of 1 lb./sq. in. was specified for all three instruments. The samples were dusted immediately prior to testing with a camel's-hair brush to minimize the effect of any extraneous material present on the surface of the samples.

The test samples consisted of a number of sets of multicolored folding cartons taken from actual production runs. Samples were selected so that 6-by-8-in. areas could be taken without encountering scores. All pieces for a given sample were taken as near the center of the printed sheet as possible and from the same skid of board. It was requested that samples be taken only when the press was printing satisfactorily and when there was no interruption in the printing operation. A total of 500 pieces were secured for each sample. Care was taken to disturb the test samples as little as possible during handling and shipping.

The foregoing samples were supplemented with single, solid-color, production press proofs prepared with flat and gloss inks on three grades of stock; namely, machine coated, white patent-coated and bleached board. These one-colored solid prints were rubbed with unprinted board at 10, 30 and 80 strokes. No printed-surface to printed-surface samples were included for this group of samples.

All of the tested specimens were carefully identified, stapled together and were available at the meeting in which experimental results were discussed and correlated.

The same operators were used for testing all the samples at a given testing station and comments from the operators were solicited and considered by the committee together with the actual test results.

Evaluation and conclusions

As was readily apparent, the round-robin series of tests resulted in a large number of samples. In all, a total of 20 samples was tested in triplicate for each test condition on the three instruments at all three testing stations. This represented a total of 540 test results that were available to the committee for evaluation. The samples had intentionally been selected to represent a wide range of typical folding cartons. Flat and gloss inks as well as gloss overprinted inks were included.

The committee members individually examined the entire set of samples and compared the operating comments from the three testing stations.

The three instruments were rated by each of the active committee members according to the following nine points: (1) ease of operation, (2) speed of operation, (3) ease of interpretation, (4) correlation, (5) reaction of operators, (6) training of operators, (7) reproducibility, (8) flexibility and (9) dependability.

In evaluating the results of the round-robin testing, it was readily apparent to the committee that all three testers represented a distinct improvement over hand-driven rub testers now in general use.

In general, there was an indication that all three testers tended to measure the same properties. While the samples were not ranked identically by all three testers, the incidences of agreement were more numerous than were those of disagreement.

It was readily apparent that the severity of the rubbing action for a specified number of strokes varied for each of the instruments.

After thoroughly discussing the data available, it was the unanimous decision of the five active members present, voting by ballot, that the Sutherland Rub Tester was superior to the other two for evaluating the rub resistance of folding cartons.

The Sutherland tester was considered to outrank the other two instruments by a detectable margin on practically all points of evaluation considered. With the Sutherland tester, no mechanical difficulties of any kind were detected during the round-robin testing program. All operators preferred to use this particular tester. The Sutherland machine gave test results in the shortest period of time.

It was recognized by the task committee that many other points, in addition to the instrument itself, must be standardized before a complete testing procedure can be established. The committee recommends the collection of such data. Additional points concerning which experimental data could be profitably obtained include the following: Information on the preferred number of test specimens included in evaluating a sample for rub resistance, the effect of atmospheric conditions upon rub resistance, the effect of aging of the ink film on the test results, the study of the use of rub-testing procedure for evaluating product rub (both wet and dry) and similar points.

Acknowledgments

The writer, on behalf of the Joint Task Committee, wishes to acknowl-

edge the fine cooperation received from individuals and companies, including The Ace Carton Corp., Robert Gair Co., Inc., Lord Baltimore Press, The Ohio Boxboard Co. and the Sutherland Paper Co. The latter company served as a collecting station for gathering test samples and used its facilities in precutting all of the test samples and collecting them into packets with their proper identification.

The services of the staff of the Folding Paper Box Assn. of America were very helpful on secretarial and clerical work.

In the writer's opinion, the approach taken in establishing this Joint Task Committee illustrates an ideal manner in which groups having similar problems can secure information to their mutual advantage. The chief advantage of this approach is that it allows the collection of information and exchange of ideas at a faster rate than would be possible by individual group activities.

Operation of Sutherland Ink Rub Tester. By Martin Galbraith**

The Sutherland Ink Rub Tester is designed to evaluate rubbing resistance of an ink film on paper or paperboard. The machine is designed so that results are reproducible.

The following tests may be made with the Sutherland Rub Tester: *(a)* dry rub, *(b)* wet rub, *(c)* wet bleed or transfer, *(d)* wet smear and *(e)* functional rub.

Description

The tester is a motor-driven device for moving a weighed test specimen over a printed sample through an arc of 2¾ in. for a predetermined number of strokes.[1] Movement is fixed at the rate of 43.1 strokes/minute. Two-pound and four-pound weights are provided, each having 4 sq. in. of effective contact area. Thus, the 2-lb. weight provides a contact pressure of ½ lb./sq. in. and a contact pressure of 1 lb./sq. in. is provided by the 4-lb. weight.

A template and a knife for cutting sample strips are included with the rub tester.

A supply of 80-by-80 count bleached-muslin cloth has been found useful in testing wet smear, wet rub and wet bleed.

Test specimen

The test requires two pieces of stock, the printed test specimen and a test strip, which is usually unprinted. Cut a test specimen approximately 6 by 3 in. representing average ink lay and coverage. When the printed area permits, the 6-in. direction should be cut across the grain of the sheet, but must not cross pressed or cut scores.

Prepare test strips by placing the template on unprinted paper or paperboard from the same shipment of stock used in printing the test sample. Seven and one-half inch strips for the 4-lb. weight are prepared by cutting around the outside of the template and cutting through the inner slots to facilitate bending the strip to conform to the test block.

To prepare samples for the 2-lb. weight, trim test strips to conform to the smaller template.

Procedures

(a) Dry rub. Clip a 7½-by-2-in. test strip to the 4-lb. test block, with the printing surface away from the rubber pads. Place the test specimen, print side up, on the rubber pad of the base plate. Place the weight over the sample, making sure that one of the 1-by-2-in. rubber pads of the test block is over the ink area being tested and that both surfaces are free of dirt. Preset the tester for 10 strokes, or for any other number of strokes selected as standard for a particular printed surface. The tester is preset by loosening the small thumbscrew on the face of the dial, moving the pointer arm to the desired number of rubs and tightening the thumbscrew. The machine will operate for the preset number of rubs each time the operator presses the red button below the dial face. Continuous rubbing may be obtained by turning the red button clockwise.

When the rubs have been completed, examine both the test specimen and test strip for signs of transfer. The two pieces should be stapled together and used for visual reference and interpretation. They should be marked plainly with the number of rubs given.

(b) Wet rub. Mount the strips in the same manner as for dry rubs, using the 2-lb. test block. Preset the tester for one rub. Place three to six drops of water on the printed surface so that they will be covered by the test block. Place the block in position and immediately press the "start" button. After one stroke, examine both surfaces for color transfer. Repeat single strokes until ink failure is noted or the surface of the sample being tested shows fuzz or abrasion.

(c) Wet bleed or transfer. Mount a 5¼ -by-2 in. blotter strip on the 2-lb. test block with the felt or smooth side out and saturate the blotter with water (an eye dropper is convenient). Place the wet blotter on the sample to be tested and leave in place for four minutes. Remove the block without rubbing and examine for ink transfer to the blotter.

(d) Wet smear. Use a water-saturated blotter on the 2-lb. block and actuate the tester for one stroke. Examine the blotter for color transfer. In cases where extreme water resistance is required, more rubs may be specified. An alternate procedure consists of mounting a 6-by-2-in. piece of 80-by-80 count bleached muslin on the 2-lb. test block over a blotter as specified above. This procedure has been found particularly useful since it eliminates the effects

(*This article continued on page* 194)

TABLE I — RUB CHART

Test	*Test block*	*Size of strip (inches)*	*Suggested number of strokes*	*Strip material*	*Contact time before rub*
Dry rub-ink	4 lb.	7.5 x 2	10	Test sheet	0
Dry rub-varnish	4 lb.	7.4 x 2	25	Test sheet	0
Wet rub	2 lb.	5.5 x 2	*	Test sheet	0
Wet bleed	2 lb.	5.5 x 2	0	Std. blotter	4 min.
Wet smear	2 lb.	5.5 x 2	*	Std. blotter or muslin	0

* Repeat one-stroke rubs until sample fails.

** Technical Director, Sutherland Paper Co., Kalamazoo, Mich.

[1] A "stroke" comprises one complete to-and-fro motion of the test weight.

Moisture equilibria of food products

Procedure proposed by Packaging Institute's Food Committee offers two alternative test methods

In many respects PI Food 1p-52, which follows, is the most significant of the Packaging Institute Test Methods recently published. Its "Procedure for Determination of Humidity-Moisture Equilibria of Food Products" covers one of the most fundamental of all packaging considerations. And it is the first of the PI methods, in this series, to be based on original work rather than adapted from existing standard test methods. The Wink and Landrock methods, offered as alternatives in this procedure, have previously been published in MODERN PACKAGING, *but have not previously been officially adopted by any organization. It should be noted that PI Food 1p-52 is now in the "proposed" status, subject to comment and correction. Comments may be addressed to Dr. L. W. Elder of General Foods Corp., chairman of the Packaging Institute's Food Committee.*

Procedure for E.R.H. of food products (PI Food 1p-52)

The equilibrium relative humidity (E.R.H.) of a substance—i.e., the relative humidity (R.H.) at which the substance will neither gain nor lose moisture at constant temperature—is an important factor to be considered in evaluating the storage characteristics of the product. Humidity equilibrium test methods provide data from which a moisture equilibrium curve may be prepared showing the relationship between storage relative humidity and ultimate moisture content of product.

Moisture equilibrium curves are of most direct value in predicting the general level of package protection which is required by any given product. These curves are also useful in specifying humidity levels in air-conditioned packing rooms and in establishing allowable product moisture contents at the time of packing.

The Food Committee has investigated two methods for the determination of humidity-moisture equilibria. The methods give essentially identical results and both are considered to be satisfactory. The methods are:

Method I—Weight Equilibrium Method (Wink)—(Reference 1)

Method II—Graphical Interpolation Method (Landrock)—(Reference 2)

It is suggested that the following factors be considered when choosing one or the other of the methods for any particular test.

Advantages of Method I are:

1. Adaptable for routine work with a minimum of attention.
2. Requires less skill of operator.
3. Affords ample time for total equilibration throughout the particles in products in which moisture transfer is slow.
4. Detects instability of certain products at elevated humidities. Slow chemical, microbial or enzymatic changes may occur in these products which are often accompanied by resultant changes in the equilibrium characteristics of the product.
5. Measures rate of moisture change during equilibration process.

The disadvantages of Method I are:

1. May require up to three weeks or longer for valid results.
2. Requires special cells and modification of analytical balance.
3. Must be conducted in constant-temperature room or cabinet.
4. The use of salt solutions restricts the number of test relative humidities that can be used. (Sulfuric acid solutions should *not* be used as their concentrations would change during the test.)

Advantages of Method II are:

1. Results available in about a half day for a single point on a product "as received," permitting quick evaluation of process or formula change. Complete curve may be obtained in not more than one week.
2. Need for controlled-temperature room or cabinet is less critical.
3. Unlimited selection of test relative humidities through the use of sulfuric acid. (Salt solutions may be used, if desired.)
4. Permits rapid evaluation of perishable products at high relative humidities without spoilage.

Disadvantages of Method II are:

1. Some preknowledge of sample properties is desirable to minimize the number of weighings.
2. Lack of opportunity for slow moisture penetration (tempering) in some products.
3. Requires a more experienced and technically trained operator.

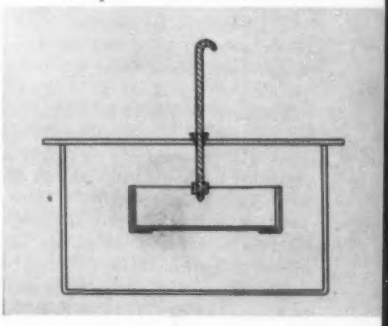
HUMIDITY-MOISTURE EQUILIBRIUM TEST

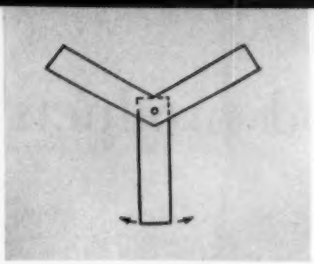
Method I—Weight Equilibrium

Apparatus

1. Crystallizing dishes. 125 by 65 mm., with ground-glass top rim.
2. Glass plates. Double-strength window or plate glass 5⅛ by 5⅛ in. A

1. Equilibrium test unit.





2. Supporting bracket.

$^{9}/_{16}$-in. hole is drilled ¼ in. off center through each plate.

3. Heavy vacuum grease. Celvacene, Cello-Seal, etc.

4. Petri dishes. 93 by 18 mm.

5. Aluminum brackets. An 0.025-in. aluminum sheeting cut and formed into brackets around Petri dishes, as in Fig. 2.

6. Brass hanger. An 0.090-in.-diameter brass rod, threaded on one end, hooked on opposite end, as in Fig. 1, for supporting bracket and Petri dish.

7. Analytical balance. Left pan and hanger removed. Platform about 2 in. high placed in balance straddling the left pan arrest.

8. Constant-temperature room or cabinet.

9. Vacuum oven. For moisture determinations.

Chemicals

10. Saturated salt solutions. Salts used will be determined by the humidities which are desired (see Table I).

Preparation of sample

1. Approximately 200 gm. of the product to be tested will be required in order to obtain sufficient information for the construction of a moisture equilibrium curve.

2. Thoroughly mix the sample and condition it for 24 hrs. in a sealed container. Conditioning temperature shall be that at which the test is to be conducted.

3. Determine the moisture content of the product by drying duplicate, weighed aliquots of the sample in the vacuum oven for 16 hrs. at 70 deg. C., full vacuum, with three bubbles of dry air per second passing through the oven. The observed loss in weight is converted to per cent moisture as described in "Calculations."

4. For certain products, the vacuum-oven moisture determination described in Section 3 above, will not be satisfactory and other methods must be used. In case of doubt, refer to the "Methods of Analysis" of the A.O.A.C. (Reference 3) or similar compilations of test methods.

Preparation of humidity-control solutions

1. It is most convenient to prepare salt solutions in quantities of about one liter, storing these in stoppered re-agent bottles for use when needed.

2. For each solution, warm one liter of water to about 100 deg. F. Add the appropriate salt (Table I), stirring frequently until a saturated solution is obtained. Cool this solution to the temperature at which the test is to be conducted, then add a small additional amount of the salt crystals.

Procedure

1. All apparatus must be conditioned to the temperature at which the test is to be conducted. It is suggested that a temperature of 73 deg. F. (22.7 deg. C.) be used.

2. Prepare large crystallizing dishes by coating the ground top rims with a film of grease. Add approximately 50 cc. of appropriate salt solutions to these dishes. An appropriate series of humidities for this test is: 11.1% R.H.; 22.9% R.H., 32.9% R.H.; 39.2% R.H.; 54.1% R.H.; 64.8% R.H.; 75.5% R.H.; and 86.5% R.H. The salts for these and other humidities are listed in Table I.

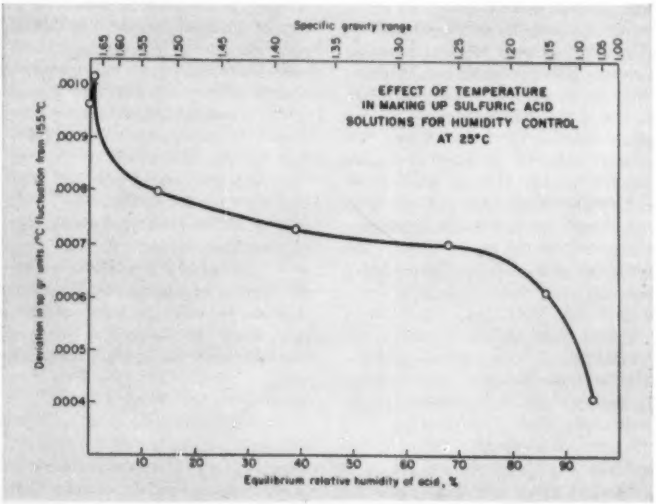
3. Tare weigh small Petri dishes and record.

4. Accurately weigh 10 gm.

TABLE I—A PARTIAL LIST OF SOME SALTS AND THE RELATIVE HUMIDITY OF THEIR SATURATED SOLUTIONS AT THREE DIFFERENT TEMPERATURES*

Salts	*Relative humidity, %*		
	73°F.	*86°F.*	*100°F.*
Lithium chloride	11.1	11.2	11.1
Potassium acetate	22.9	22.0	20.4
Magnesium chloride	32.9	32.4	31.9
Chromium trioxide	39.2	40.0	40.2
Sodium dichromate	54.1	52.0	50.0
Sodium bromide	58.5	56.3	53.7
Sodium nitrite	64.8	63.3	61.8
Sodium chloride	75.5	75.2	75.1
Ammonium sulfate	80.1	79.6	79.1
Potassium chromate	86.5	86.3	85.6
Ammonium mono phosphate	92.9	92.0	91.1

*Institute of Paper Chemistry, Report No. 40, "The Equilibrium Relative Humidities above Saturated Solutions at Various Temperatures," Feb. 15, 1945.



3. Effect of temperature on specific gravity of sulfuric-acid solutions. Results are based on data recalculated from Lange (12). As an example of how this graph is used, assume that after adding sulfuric acid to water, temperature of the solution is now 60 deg. C. Specific gravity of the solution at this temperature in this example is 1.377 which corresponds to E.R.H. (equilibrium relative humidity) of approximately 40%. In order to correct it to 15.5 deg. C., read from plot the deviation which, in this example, is 0.00073 sp. gr. units for each deg. C. by which solution temperature exceeds 15.5 deg. C. (60.0–15.5) (0.00073) = 0.0325 sp. gr. units correction factor. Corrected sp. gr. at 15.5 deg. C. will be 0.0325 + 1.377 = 1.409 (5), corresponding to E.R.H. of 32.9%.

(±0.001 gm.) of test sample into each Petri dish. Cover each dish with a watch glass immediately after weighing to prevent gain or loss of moisture from the sample. In the case of bulky, low-density materials, this sample weight should be reduced so that the sample depth is not over 2 mm. when evenly distributed over the bottom of the dish.

5. Assemble test units by hanging Petri dishes in the aluminum brackets and carefully placing the glass-plate covers on the crystallizing dishes. Press covers gently to insure continuous contact with the greased top rims.

6. The initial weighing of each unit shall be made immediately after the unit is assembled. Weighings are made by placing the entire unit within the balance atop the platform which straddles the pan rest. The hooked brass rod is lifted and gently engaged with the pan hook of the balance or with the eye of the counterpoise weight. The position of the unit is then carefully adjusted until the rod hangs freely through the hole in the glass-plate cover. Determine and record the combined weight of suspending device, Petri dish and sample.

7. As units are weighed, they are removed from the balance and carefully transferred to a storage shelf. Care must be exercised that the salt solution does not contact and wet the suspended Petri dish or bracket while moving the unit.

8. Reweigh all units periodically. Every second day is considered to be an appropriate weighing interval. Continue weighing until no significant change in weight occurs during three successive weighing intervals. The following weight-change tolerance limits are suggested as a general guide in determining when, for all practical purposes, equilibrium has been reached. These tolerances may be varied to suit specific products or the particular desires of the individual laboratory.

Relative humidity	*Allowable weight change during four days at equilibrium*
0–60%	±0.005 gm./10 gr. sample
60–75%	±0.01 gm./10 gr. sample
75–95%	±0.05 gm./10 gr. sample

9. When equilibrium conditions are reached, remove Petri dishes from units and immediately weigh on analytical balance.

10. Place Petri dishes in vacuum oven and determine the final equilibrium moisture content of each sample as previously described in "Preparation of Sample," Section 3.

11. If desired, the moisture determination described above may be substituted by or supplemented by calculation of the theoretical moisture content using the observed total weight gain as a basis. The formula for this calculation is presented below.

Calculations

1. For % moisture content by vacuum-oven drying:

$$\% \ H_2O = \frac{\text{Wt. loss after drying}}{\text{Wt. of sample before drying}} \times 100$$

2. For calculated % moisture content in event of weight gain:

$$\% \ H_2O = \frac{(\text{Initial wt. sample} \times \% \text{ original } H_2O + \text{wt. gain})}{\text{Initial wt. sample} + \text{wt. gain}} \times 100$$

3. For calculated % moisture content in event of weight loss:

$$\% \ H_2O = \frac{(\text{Initial wt. sample} \times \% \text{ original } H_2O - \text{wt. loss})}{\text{Initial wt. sample} - \text{wt. loss}} \times 100$$

Report

1. Plot equilibrium per cent moisture content (y-line) against per cent relative humidity of the atmosphere (x-line). Connect all points on a smooth, accurately placed curve which is the moisture equilibrium curve for the product tested.

2. Indicate on graph the initial moisture content of the product as received, the temperature at which the test was conducted and the method of determining moisture content.

3. If possible, also indicate the observed critical moisture content of the product—where it cakes or undergoes other undesirable changes.

Precision

1. At relative humidities below approximately 70% R.H., precision is usually ±0.05% H_2O for any given relative humidity.

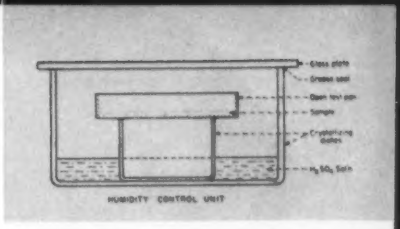
2. At relative humidities above approximately 70% R.H., precision is usually about ±0.15% H_2O for any given relative humidity.

Method II—Graphical Interpolation Method

Apparatus

1. Crystallizing dishes. 125 by 65 mm., with ground-glass edge.

2. Glass plates. Double-strength window glass 5⅛ by 5⅛ in.



4. Crystallizing-dish assembly in use as humidity-control chamber.

3. Heavy vacuum grease. Celvacene, Cello-Seal, etc.

4. Crystallizing dishes. 50 by 35 mm., for pan platforms.

5. Glass beads. For preventing small crystallizing dishes from floating in the solutions.

6. Metal pans. Preferably aluminum, such as WVTR pans, 3 in. i.d.

7. Glass-stoppered re-agent bottles. 500-ml. capacity.

8. Erlenmeyer flask. 2 liter.

9. Vacuum oven.

10. Humidity cabinet (90% R.H., 100 deg. F.).

11. Analytical balance (Chainomatic).

12. Glass jars. With rubber-gasket-lined screw caps, approximately 4 oz.

13. Teaspoon.

14. Graduate cylinders.

15. Precision hydrometers. Covering desired range of specific gravities (Table II) readable to three decimal places.

16. Hydrometer cylinder.

17. Titration equipment (optional).

Chemicals

1. Sulfuric acid, C.P., re-agent.

2. Dehydrite (anhydrous magnesium perchlorate).

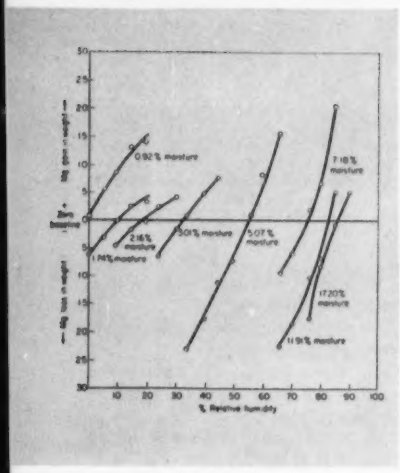
(See "Preparation of humidity control solutions.")

Preparation of sample

1. If it is simply desired to measure the E.R.H. of the sample at the moisture content at which it is supplied, no further preparation of the sample is necessary.

2. If a complete curve is desired, prepare about eight or nine samples of the product with different moisture contents covering the entire range of moisture in which there is any practical interest. These samples, of about 60 gm. each, are prepared simply and rapidly as follows:

a. Set aside one sample as it comes out of the package or directly from production. Take a second sample of the material (about 120 gm.) and re-



5. Graphical interpolation isotherms for a dried chocolate syrup, as obtained by graphical interpolation method (1 hr. at 25 deg C.)

duce its moisture content by placing it in a vacuum oven at 40-50 deg. C. and full vacuum for about one hour. Then remove half and place the remainder back in the oven for another hour. This procedure will provide two samples, each having a lower moisture content than that of the original sample. Store these samples in screw-cap-covered glass jars at 25 deg. F. until they are to be used in a test.

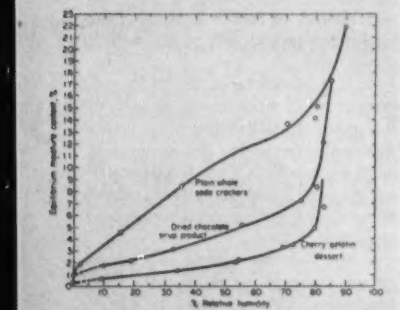
b. Place five or six other portions, each of about 60 gm., in an atmosphere of high humidity and temperature (about 90% R.H. and 100 deg. F.) for varying times, to provide a wide range of moisture contents. Stir the samples occasionally to insure a uniform moisture content in each. If a humidity cabinet is not available, a deep dish of the product can be placed in a large (12-in.-diameter) crystallizing dish filled with several inches of water and covered with a glass plate. Store these samples also in screw-capped jars.

c. Determine the moisture content by drying duplicate aliquots of all samples for 16 hrs. in the vacuum oven at 70 deg. C. at full vacuum, with three bubbles of dry air per second being pulled through the oven. Samples weighing approximately 2 gm. each are used. If the moisture contents of the prepared samples do not cover the entire range at suitable intervals, it is a simple matter to prepare one or two more samples as needed.

$$\text{Calculated \% moisture content} = \frac{\text{Wt. loss on drying}}{\text{Wt. of sample before drying}} \times 100$$

d. Samples conditioned to high moisture levels should be "tempered" by holding them in screw-capped jars at least 1 hr. before testing.

6. Humidity moisture equilibrium curves for various food products, as obtained by graphical interpolation test method (25 deg. C.)



Preparation of humidity-control solutions

1. Prepare about 500 ml. each of a sufficient number of sulfuric acid solutions to cover the range of 5 to 90% R.H., preferably in steps of 5% each. Satisfactory results can be obtained with 10% R.H. increments. Refer to Table II in making up the solutions.

2. Add the acid to the water, preferably in an Erlenmeyer flask kept in a pan of warm water (to prevent shock breakage). Then cool with cold water to 15.5 deg. C., the calibration temperature of the hydrometers. Pour the mixture, after carefully mixing, into a 14-in.-high hydrometer cylinder and read the specific gravity to the third decimal place with a precision-grade hydrometer. Bottle the acid solution in a glass-stoppered re-agent bottle, label and store at 25 deg. C. until needed (see Fig. 1).

3. Titration procedure · (optional). In Table II, the normality figures were obtained experimentally by titration with approximately 0.1N NaOH, methyl red being used as the indicator.

Titration was carried out until a definite, bright yellow color was obtained. These normality figures are useful in checking the E.R.H. of a given sulfuric acid solution without the use of a precision hydrometer, which usually requires about 400 ml. of solution. The method is particularly applicable in checking solutions that have been in use for a long time, as only a small sample is required.

TABLE II—TABLE FOR MAKING UP SULFURIC ACID SOLUTIONS TO PROVIDE SPECIFIED RELATIVE HUMIDITIES AT 25 DEG. C.

R.H. %	*Specific gravity*	*Normality*	*cc. H_2SO_4*: H_2O*
0	1.835	—	500 : 0
5	1.608	22.0	285 :215
10	1.552	19.5	255.5:244.5
15	1.512	18.0	235.3:264.7
20	1.478	16.8	219.2:280.8
25	1.450	15.8	205.0:295.0
30	1.425	14.8	192.2:307.8
35	1.400	13.9	179.7:320.3
40	1.377	13.1	170.1:329.9
45	1.355	12.3	159.9:340.1
50	1.335	11.5	149.4:350.6
55	1.314	10.8	139.3:360.7
60	1.293	10.0	129.1:370.9
65	1.271	9.2	119.1:380.9
70	1.248	8.3	108.5:391.5
75	1.224	7.4	97.0:403.0
80	1.197	6.3	84.1:415.9
85	1.165	5.2	71.0:429.0
90	1.127	3.9	54.5:445.5
95	1.076	2.3	32.2:467.8
100	1.000	0.0	0 :500

* Assuming 98% pure commercial C.P. acid of 1.84 specific gravity.

NOTE: Recalculated from data in Lange (Lange's Handbook of Chemistry, 6th ed. 1946, pp. 1319-1320, Handbook Pub. Co., Sandusky, Ohio) and by Stokes, R. H. and Robinson, R. A. (Ind. Eng. Chem., 1949, Vol. 41, p. 2013).

To obtain the most accurate results, an attempt should be made to dilute the acid solution to approximately 0.1N before titrating. To do this, some idea of the approximate strength of the acid is needed.

For example, assume that a sulfuric acid solution is expected to have an E.R.H. of about 78%. Reference to Table II shows that the normality of the acid should be 6.8. Assume that the normality of the base is 0.1063 and that a titer of approximately 25 ml. is desired.

The sample volume is then calculated as follows:

$N_{acid} \times$ sample volume $= 50 \times$ ml. base for $\frac{1}{50}$ aliquot $\times N_{base}$

$$\text{Sample volume} = \frac{50 \times 25 \times 0.1063}{6.8} = 19.5$$

The value of 19.5 is then rounded off to the nearest whole number, 20,

and 20 ml. of original acid solution is pipetted into the 100-ml. volumetric flask and diluted to the mark with distilled water. A 2-ml. aliquot is then withdrawn for titration. About 15 ml. of distilled water is added to the aliquot. If the titer is 21.35-ml. base, the N_{acid} is then calculated as follows:

$$N_{acid} = \frac{50 \times 21.35 \times 0.1063}{20} = 5.68$$

The value of 5.68 for the N_{acid} corresponds to an R.H. of 83%.

Procedure

1. From the samples prepared as described above, approximately 5-gm. portions are weighed on an analytical balance* and placed in crystallizing dishes in humidity control units (Fig. 4). These units containing the acid or Dehydrite provide the specified relative humidities.

2. Place the glass jar containing the sample to be tested near the balance in a constant-temperature room (25-deg. C. is recommended).

3. Place one of the WVTR dishes (Fig. 4) or any similar pan on the left pan of the balance and balance with the proper weights. It is not necessary to record the tare weights. With a teaspoon, place about 5 gm. of sample in the WVTR pan. Adjust the weight as rapidly as possible to within 5±0.01 gm. If not possible to adjust the weight this closely because of large particle size, adjust as closely as possible without the sacrifice of speed.

4. In samples where vapor pressures are considerably above or below the R.H. of the balance atmosphere, there will be a constant, slight loss or gain in weight, resulting in a shifting of the needle away from the index mark. By carefully observing the rate of change, remove the pan with contents and quickly place it in the first of the humidity control units to be used, so that the test unit is covered again at just the instant the needle would have passed over the index mark. The deviation need be no more than 0.2 mg. under extreme conditions, because the transfer from balance pan to test unit is made within a matter of 4 sec. without any great difficulty.

5. Record to the nearest half minute the time the pan is placed in the dish. *After the time is recorded*, make the weight reading and record it also. Handle all other pans of the same sample in the same manner.

6. As each pan is rapidly reweighed at the end of exactly 1 hr., record the weight and plot the weight change on a specially prepared graph paper, as in Fig. 5. When enough points are plotted to permit drawing a smooth curve crossing the zero base line (representing no change in weight), there is no necessity to weigh any more pans.

7. For ordinary routine tests, a little judgment will permit the saving of considerable time and effort. For example, if a sample has a moisture content much higher than that of the usual production sample, there is little point in running tests at low R.H.'s. Usually five relative humidities will suffice if they are intelligently chosen. The usual moisture equilibrium curves are drawn as soon as the points are obtained by graphical interpolation.

8. When testing free-flowing powders, tamp the powder down by shaking the pan until the exposed surface area is reasonably constant.

9. When unit items are being studied, such as candy wafers, crackers, etc., where size, shape and weight of the unit items are reasonably constant, it is preferable to use the unit item itself instead of a definite weight of crumbled product. Liquids, including not too viscous syrups, may be handled on a volume basis instead of a weight basis. Extremely viscous materials, such as marshmallow, may be handled by filling very small metal cups brimful with the material, leveling it with the help of a spatula. The cups, which must be uniform in dimensions, are then placed in the large aluminum pans individually.

10. It is suggested that in most cases a 1-hr. test period will be most convenient, but exactly the same values for E.R.H. will be obtained if longer test periods are used.

Report

1. Where only a single moisture level is studied, simply report the E.R.H. In some cases, as in process control, the E.R.H. may be used as a quick index of moisture content.

2. Where a curve is to be drawn, indicate on it, when known, the regions where the product undergoes changes in properties (caking, etc.).

Precision

Except at R.H.'s above about 80%, where the reproducibility is somewhat reduced, results are usually within 0.25% R.H. for any given moisture content.

Interpretation

1. Where the humidity-moisture equilibrium curve starts out and continues with a high slope, as in starchy products (see crackers, Fig. 6), the indication is that moisture sorption by the product is fairly uniform, with the sorption of considerable water even at relatively low R.H.'s. Products of this type may often be used as selective moisture absorbents to protect other products whose curves become steep only at high relative humidities.

2. Some products, particularly those high in sugars, show a low, flat curve, indicating little absorption of water, until high R.H.'s (usually around 80%) are reached, when the curve suddenly becomes very steep because of the crystals going into solution (see cherry gelatin dessert, Fig. 6).

These types of products must be stored at R.H.'s at least slightly lower than their critical R.H., or pronounced physical changes will usually be observed.

3. Other products, such as dried syrups, usually show an intermediate-type curve. These include soluble coffee, dried chocolate syrup products and powdered molasses (see dried chocolate syrup product, Fig. 6). These products obviously must be stored at lower R.H.'s than those in paragraph 2 above, for their curves are steeper and the critical relative humidities are usually considerably lower.

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2. Landrock, A. H., and Proctor, B. E., "A New Graphical Interpolation Method for Obtaining Humidity Equilibria Data, with Special Reference to its Role in Food Packaging Studies." *Food Technology, Vol. 5* (8), 332, 1951. MODERN PACKAGING, *Vol. 24* (6), 123, 1951.

3. Assn. of Official Agricultural Chemists. *Official and Tentative Methods of Analysis*. A.O.A.C., Washington 4, D. C.

4. Elder, L. W., "Fundamentals of Package Function." MODERN PACKAGING, *Vol. 23* (2), 138, 1949. *Chemical and Engineering News, Vol. 27*, 2682, 1949.

*A Chainomatic balance is almost indispensable for rapid work.

Questions & Answers

This consultation service on packaging subjects is at your command. Simply address your questions to Technical Editor, Modern Packaging, 575 Madison Ave., New York 22, N. Y. Your name or other identification will not appear with any published answer.

Flexible pack for cleaning fluid

QUESTION: We manufacture a cleaning compound which has pine oil as one of its principal ingredients. We were considering a change from metal containers of 25 and 50 # size to paper boxes of various sizes as a means of eliminating much of our storage problem. However, we were faced with a problem of a suitable box liner to protect the product. We have found that pine oil either soaks into paper or evaporates through it. We have checked the possibilities of various plastic films, but cannot get any clear idea of whether they will hold the pine oil. Can you suggest a suitable plastic film or box liner?

ANSWER: Presumably, pine oil is the only active ingredient in your compound and the oil must be held in the package without staining or loss. There are many different kinds of flexible packaging materials that should be resistant to pine oil and which could be fabricated into box liners suitable for your product. The only other consideration would be the cost. One group of materials would be glassine or parchment paper. These papers could be used in the form of a duplex bag with kraft as an outer ply and in this form they would be easy to set up as box liners.

The selection of a suitable plastic film is rather difficult because many films would be softened or dissolved by the pine oil and many others would allow the pine oil to be lost by permeation and evaporation. Cellophane would probably be one of the most satisfactory films.

You should also consider flexible structures involving aluminum foil. In this case the foil would be laminated to kraft paper and formed into a bag or a box liner. Since there are so many possible materials that could satisfactorily preserve your product, the final answer to your problem can only be found by testing a variety of the different classes of the materials suggested. These tests would give a comparison of their performance with your shelf-life requirements and help determine the cost of materials, machinery and facilities for erecting, filling, handling, etc. A final decision can be made when all of these elements are known. You may find a considerable saving in cost for fibre packages in comparison with metal cans. However, you must make your cost comparison with the completed package as it is shipped out of your plant because metal cans could show lower labor cost.

Greaseproofing molded pulp box

QUESTION: We are manufacturers of various containers molded from wood pulp (papier maché) such as egg trays which are used to pack eggs for export. Before eggs are placed in the egg trays, they are usually processed in oil as a preservative. A certain amount of this oil remains on the egg, with the result that the pulp trays absorb the oil and are stained. Can you suggest any chemicals which could be placed in the pulp during manufacture to proof the tray against oil penetration?

ANSWER: It would not appear practical to attempt to add sufficient greaseproofing agent to the wood pulp to greaseproof your egg trays. Such a method of obtaining greaseproofness would require a relatively large amount of added chemicals and this could interfere with your process of manufacture by affecting the drying rate, etc. It is suggested that you attempt to obtain greaseproofness by means of a sprayed-on coating after the egg trays are formed and dried. This surface treatment would be most economical of materials and would give a greaseproof layer at point of contact with oil on the egg.

Water-soluble materials, such as certain cellulose derivatives and some natural gums could be used. It is also possible that water-soluble resins, such as polyvinyl alcohol or emulsions of polyvinyl acetate, could be used in this manner. It is suggested that you try these greaseproofing materials, as well as sodium silicate, to determine their effectiveness and to see if such treatment would require any change or additions to your present manufacturing process.

If such tests are made, samples should be given a shipping test because vibration in actual handling could cause grease staining while the same samples, not vibrated in the laboratory, might show excellent results. You must also keep in mind, that the addition of certain greaseproofing agents could impart flavor or odor to eggs and promote mold growth if stored at higher humidities.

Temperature-control packaging

QUESTION: One of our products is quite sensitive to temperatures in excess of 100 deg. F. We would like to know if there is a packaging structure that would keep the temperature from going above this figure so that our product would not be affected in storage and display.

ANSWER: There is no combination of packaging materials that could keep the temperature of the product below ambient temperatures for long periods of time. The use of multiple layers of material would be useful in preventing heat pick-up for very short periods of time. Such structures could be expensive and might not be effective for normal distribution and display. The best answer to your problem is to maintain small inventories in warm weather and be sure they are given cool storage in warehouses and preferential handling by retailers.

Why is Sunkist sealed with CEL-O-SEAL?

REG. U. S. PAT. OFF.

A natural-strength fruit juice that must be kept pure, Sunkist Growers' lemon juice gets tamperproof protection with Du Pont "Cel-O-Seal" bands. These colorfully printed bands also add eye appeal . . . give extra prominence to the Sunkist brand name.

The advantages of "Cel-O-Seal" protection can work for you, too! Attractive "Cel-O-Seal" bands are recognized by consumers as a sign of purity and quality. They hold closures tight, guard against spillage and tampering.

FREE PACKAGING SERVICE: See what "Cel-O-Seal" does for *your* products. Send in your package. Our packaging experts will band it, make recommendations, return it for your inspection. Write: "Cel-O-Seal" Section, E. I. du Pont de Nemours & Co. (Inc.), 9529A Nemours Building, Wilmington 98, Delaware. "Cel-O-Seal" cellulose bands are also sold by Armstrong Cork Co., Lancaster, Pa., and I. F. Schnier Co., San Francisco, Calif.

DU PONT CEL-O-SEAL BANDS

REG. U. S. PAT. OFF.

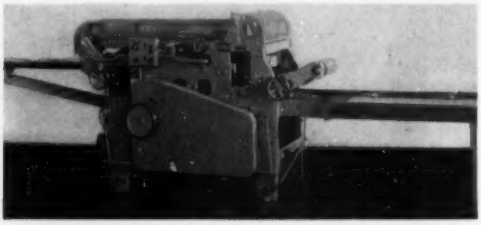
DU PONT

BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

Equipment and materials

THE NEW BACON-WRAPPING MACHINE

announced by the Battle Creek Wrapping Machine Co., Battle Creek, Mich., features a tension wrap and a double seal. The company explains that the tension wrap means cellophane is held under tension during the heat-sealing process. Air and



oxygen are rolled out of the package just before sealing. To provide a double seal, extended ends of the fold are first sealed, then folded underneath the card and resealed to the package itself. The new unit, called the Model 201, handles both pound and half-pound sliced-bacon packages in the speed range of 40 to 50 packages per minute. Packages of different dimensions, from 9 to 12 in. long, 5 to 8⅝ in. wide and up to 1 in. thick can be accommodated. Change-over from pounds to half-pounds is said to require less than one minute; changes from short to long packages can be made in less than five minutes. Flat-bottom bacon cards, or those with extended sides and end flaps can be accommodated and an electric-eye device can be furnished to register printed cellophane wrappers. The Model 201 is available either with a straight-away feed and discharge or a reverse-feed machine which feeds and discharges wrapped packages at the same end of the machine.

A NEW TABLET-PACKAGING MACHINE

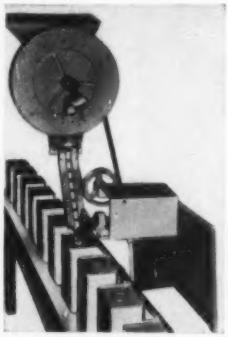
that delivers several layers of tablets—or one layer—into cardboard boxes or tins has been announced by the Pharmaceutical & Chemical Industry Supply Corp., Div. of American Roland Corp., 16 Hudson St., New York 13, N. Y. The unit is motor driven and its operation requires only one attendant. It is self-cleaning and interchangeable parts for different tablets of different size are available from the manufacturer. Automatic filling of the tablets is another feature of the machine, which is fed from a hopper at the top. The Aupama Model 64 is reported to be especially suited to the packaging of flat pills and pellets.

OVERWRAPS FOR FROZEN-FOOD CARTONS

sold by Marathon Corp., Menasha, Wis., under the Tyton trade name are now available in standard designs. Offered are 31 different designs for vegetables, three for fruits, two for shrimp and 14 for fish fillets. Brand names may be reproduced in any combination of two colors. The overwraps are rotogravure printed for high fidelity in product reproduction and product designs are reproduced from full-color photographs. The manufacturer points out that the labels do not become obsolete with changes in the carton size. The 7¾ by 12⅝ in. vegetable wrap, for instance, will fit either a 1⅝-by-5-by-4-in., a 1⅝-by-5¾-by-4-in., a 1⅝-by-5-by-4-in., a 1⅝-by-5¼-by-4-in., a 1⅝-by-5-by-4-in., and a 1⅝-by-5¼-by-4-in. carton.

A FULLY AUTOMATIC LID SEALER

introduced by the Tite-Cap Machine Co., Inc., 56 Rose St., New York 38, N. Y., is called the first fully automatic machine available for the application of metal seals, inner seals and friction lids to metal and fibre cans. Seals or lids are fed from a specially designed hopper to a rotating head equipped with magnetic fingers. A rotating head, synchronized with the continuous motion of cans on a chain conveyor, picks up a seal and applies it to the opening of the can. Cans move in continuous, uninterrupted motion. Positive sealing is effected. The rotating head and magnetic fingers are said to be fully adjustable for any position of the opening on the top of the can. In special cases where seals are to be rolled in under the neck of a spout as on olive-oil cans, a special spinning head can be furnished.

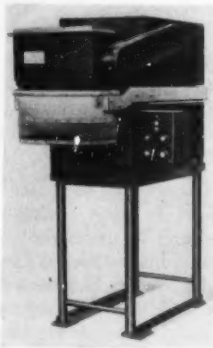


A TABLE-MODEL AMPOULE SEALER

especially designed for pilot-plant operations, research laboratories and for larger firms which have some small production runs which cannot be economically produced on large equipment, has been introduced by Popper & Sons, Inc., 300 Fourth Ave., New York 10, N. Y. Called the PerfeKtum Lab-Seal, Model HS-1, the unit is motor driven.

THE AUTOMATIC POWDER FILLING SCALE

just introduced by Thayer Scale & Engineering Corp., E. Water St., Rockland, Mass., automatically holds, fills, checkweighs and releases up to six bags a minute of resins, insecticides and other dusty powders. Weight tolerances are within plus or minus 2 oz. or less of any desired weight from 25 to 200 lbs. The new Thayer unit, called the Model 600G filling scale, has been designed specifically for use with light flooding powdered materials which are often difficult to handle. Dust-tight operation throughout the filling stage is achieved, the company reports, and a timer may be added as optional equipment to allow settling before bag is automatically released, thus supplementing the action of the dust-collector spout which carries off dust-filled air displaced during filling. All mechanical and electrical parts are in dustproof housings. A combination of rotary and gravity feed is employed:



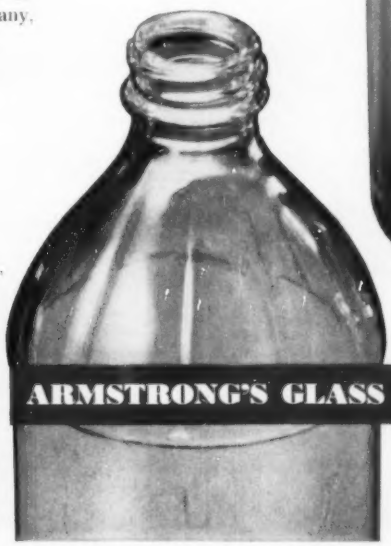
For smooth performance on your filling lines...

ARMSTRONG'S GLASS CONTAINERS

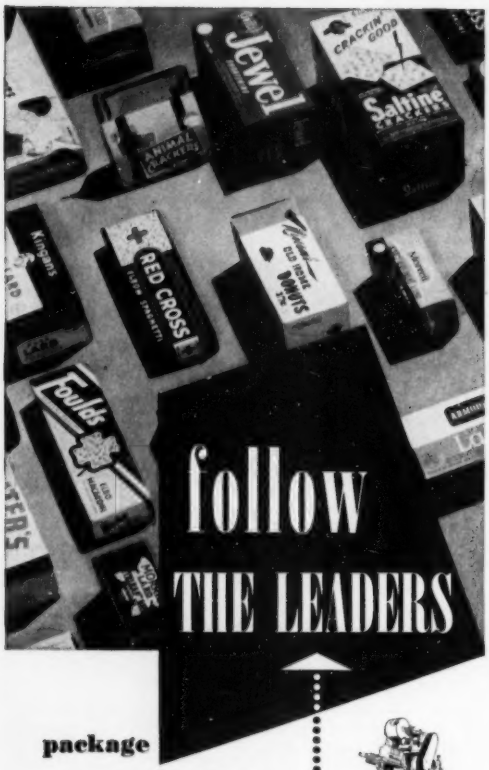
On your filling lines – that's where quality in glassware really counts. And that's where Armstrong's Glass Containers pay off for you in smoother performance, less downtime, fewer rejects.

These fine-quality containers are designed for top performance on high-speed filling lines. Glass is evenly distributed to give them extra strength. New lip finishing and fire polishing techniques insure a more dependable seal. Color is absolutely uniform in both flint and amber ware.

There's 117 years of glassmaking experience behind every piece of Armstrong's Glassware. This long experience – plus our skill and careful quality controls – means better glass for you. For further information, just contact your nearby Armstrong representative or write Armstrong Cork Company, Glass and Closure Division, 2301 Prince Street, Lancaster, Penna.



ARMSTRONG'S GLASS CONTAINERS

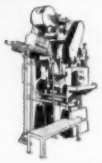


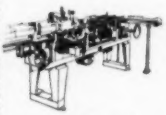
package your products the *multi*-saving Peters way!

You save space . . . manpower . . . time . . . money when you package the Peters Way . . . in open-top cartons—automatically handled through Peters forming and lining and Peters folding and closing machines.

The Peters line of packaging equipment is as complete as its machines are versatile. There are machines to fit your exact requirements, determined by your production capacity, packaging schedule—and your budget.

To obtain the *multi*-savings benefits of the Peters-way, simply write or phone. Or, send carton samples for specific recommendations.

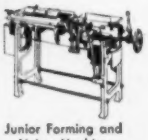

Senior Forming and Lining Machine


Senior Folding and Closing Machine

Junior Folding and Closing Machine

Peters

MACHINERY CO.
4712 Ravenswood Avenue
Chicago 40, Illinois


Junior Forming and Lining Machine

Equipment and materials

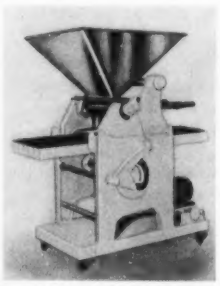
the first 95% of the fill is fed by gravity and (if necessary) compressed air and the remaining 5% is slow fed by positive means until predetermined weight is reached. Bag then releases automatically or, optionally, may be held for push-button release. The scale measures only 2 by 2 by 3 ft. and may be caster mounted.

PRICE-PANEL PRODUCE BAGS

in a new line called "Price Markers" have been introduced by the Dobeckmun Co., Cleveland 1, Ohio. The bags are manufactured from moistureproof and water-repellant cellophane, with price panels printed with special inks which will take ordinary lead-pencil, grease-pencil or rubber-stamp markings. The Price Marker line supplements the company's line of Rite Price cellophane bags for fried foods, candies and baked goods also featuring the price panels. Price Markers are available in a variety of sizes.

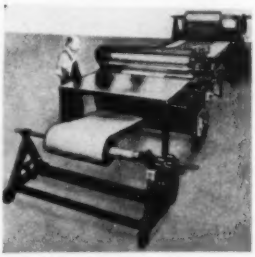
A VISCOUS PRODUCT FOUR-LINE FILLER

is a new machine offered by the Filler Machine Co., Inc., Philmont Club Station, Philmont, Pa. With a range of from 4 oz. to gallons, the versatile machine handles glues, paints, creams, peanut butter, jellies, etc., filling up to 80 containers per min. The filling method is the bottom-up, clean cut-off type and the upper filling head adjusts easily for all container heights. A single adjustment centers different-sized containers under the filling nozzles and a new double-linkage control for the bottom-fill elevator provides efficient and smooth operation, according to the company. A combination of walking-beam and pin-lug-type push rods move containers through the machine with a minimum of stopping and starting impulses. The new unit stands 5 ft. high and occupies 3 by 6 ft. of floor space. Motor is ¾ h.p. Separate motor-driven agitator, as well as automatic jar feeder and unscrambling equipment are available.



A NEW LAMINATING MACHINE

that handles both sheets and rolls, made by the Potdevin Machine Co., 285 North St., Teterboro, N. J., is a combination conveyor, gluing machine and laminator for webs up to 50 in. in width.



It is built for continuous lamination of such materials as plastic, metal, paper, leather and cork and materials of varying thickness can be combined. Coatings of adhesive are said to be easily controlled by a single adjustment of a patented dial. An electric glue heater

Better Package... Lower Cost with a **BARTELT** Packager

MAKES POUCH BAG AUTOMATICALLY FROM ROLL OF HEAT SEALING PAPER—FILM—OR FOIL

Here is fast, automatic packaging at low cost . . . resulting in a sturdy, attractive, convenient package that will boost sales, and cut waste.

The base machine makes a pouch-style bag, opens it for filling, seals it, and discharges a complete package. Design allows for selection of the filling equipment best adapted to your product.

Whether you are packaging liquid, powder, solids, or multiple items, the Bartelt Machine will handle your needs. Below are shown the packages of a few of the many nationally known manufacturers who use Bartelt.

WRITE FOR INFORMATION TODAY...

BARTELT ENGINEERING COMPANY
1904 Harrison Avenue, Rockford, Illinois

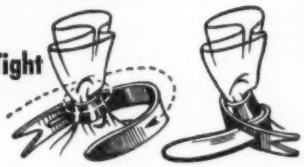
Important message to all users of pliable containers

DOUBLE-LOCK

"Zip-Tite Tie"

RE-USABLE

Finest Instant Air-Tight Closure



Food-Maker gives national endorsement in premium test

Tested in six major markets–improved six times before being put on the market–these ties have no *equal*. Advertised in newspaper premium offer by one of America's largest food companies (name on request), "ZIP-TITE TIES" scored instant consumer success. Unprecedented demand for use with refrigerator–freezer–clothes–and–utility bags. Orders accepted for 1,000 or 1,000,000 and more. Imprints at lowest cost.

Write for One Dozen Free Samples and Price List

"ZIP-TITE TIES" sold through jobbers across nation. Write for free samples, price list and name of jobber nearest you.

VISIBLE PACKAGE SALES CORP.
540 North Lake Shore Drive Chicago 11, Illinois

"If you would know The POWER of the LABEL...go to Ever Ready"

Anonymous

LABELS FOR PACKAGING
ADVERTISING, POINT O
SPEEDWAY ADDRESSI
MERCHANDISING
SHIPPING, CAUTIO
IN ROLLS, SINGLE
DIE-CUT, EMBOSSE

In a fast-changing world, with its countless new products and by-products, new problems of labeling present themselves. At Ever Ready we have ALL the answers . . . special papers, special adhesives, special formats. Heat-seal, Red-E-Stik pressure sensitive, spot-gummed, strip-gummed, carbonized. Cut single, padded, in rolls. Background of a million orders . . . over 50,000 customers. Sure, we can put LABEL-POWER to work for you, too!

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Ever Ready *Label* Corp.
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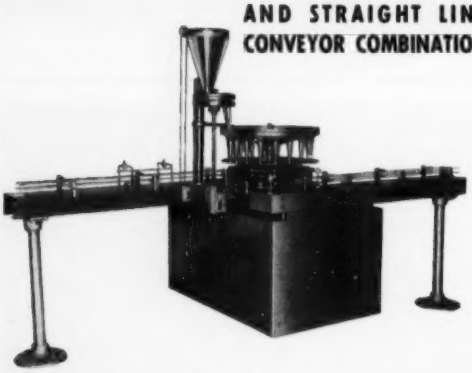
New
HIGH SPEED PACKER for FLAT BOTTOM CONTAINERS

PACKAGE DRY PRODUCTS AT MAXIMUM SPEED —AND ACCURATELY TOO

Investigate the WHIZ-PACKER ROTARY FILLER AND STRAIGHT LINE CONVEYOR COMBINATION



Each model is custom built and specially designed for handling granular and powdered materials where vibration for a tight pack and elimination of dust are required.

WHIZ-PACKERS ARE EFFICIENT • SANITARY
EASY TO CLEAN
ASSURE POSITIVE FILL WITHOUT SPILLAGE

Send for Bulletin Showing All Models

1870

FRAZIER & SON
338-01 Cortlandt St., Belleville 9, N. J.
EXCLUSIVE DISTRIBUTORS
EASTERN STATES —
WESTERN STATES —
MIDWESTERN & SOUTHERN STATES —
CANADIAN —
EXPORT —

Equipment and materials

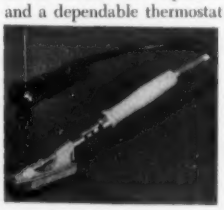
in the tank keeps adhesives at the correct consistency. A removable tank facilitates cleaning. An over-running clutch and auxiliary drive on the coating unit permit the coating rollers to run continuously and eliminate the possibility that adhesive will dry on the rollers. Pressure for the entire roller surface is controlled by a single adjustment. The machine, 22 ft. long, 6 ft. wide and 7 ft. high, is equipped with two unwind stands that handle 40-in.-diameter rolls of material with a shaft-type rewind and variable speed drive. A tightening device is provided for the canvas conveyor belt.

INDIVIDUAL LINERLESS ICE-CREAM CARTONS
called Frosty Packits are now available in three children's designs from the Marathon Corp., Menasha, Wis. These 4-oz. individual-service, ice-cream packages are decorated with cartoons

of various animals and the following inscriptions: "Brownie the Bear Buys Chocolate," "Pinky the Bunny Picks Strawberry," and "Petey Likes Vanilla Ice Cream Because It Keeps His Bib Clean." Space is left for imprinting company identity.

A NEW WIREBOUND BOTTLE CASE
that is low in cost and light in weight has been developed by the American Box Co., 1900 W. Third St., Cleveland, Ohio. It reportedly is 20% lighter than the conventional nailed-wood bottle box and costs less to make. The new case was developed primarily for handling bottled battery acid for The Firestone Tire & Rubber Co., and is said to be applicable to the handling of a variety of liquid chemicals and solutions in bottles. The Firestone container is an open-top "wirebound," compartmented for holding 12 polyethylene plastic bottles. Hand holes are provided for manual handling and a dark-colored, acid-resistant coating is applied to protect the case for long service. A lid adapts the container for shipping.

AN IMPROVED HAND IRON
called the Stimpson Super Sealer has been developed by Cleveland Lathe & Machine Co., 5400 Brookpark Rd., Cleveland 29, Ohio. The iron has a square toe said to be ideal for label sealing and a dependable thermostat with a 250- to 550-deg. F. range makes it suitable for sealing Pliofilm, polyethylene, acetate, saran and other films. A Teflon boot is available for use on "soft" films such as Pliofilm and polyethylene. The new iron is said to be suitable for long continuous use, as it is well balanced and has a comfortable handle, plus a strong



Your product couldn't ask for more—a lovely-to-look-at sales package capped with a beautiful molded Empress closure.

MAKE-UP makes the difference...

Here is another fine example of a beautiful, distinctive package you can give your products and still keep within commercial limits on container costs.

The new, lovely Contoure Line, you see here, is part of a tremendous selection of Duraglas stock-mold containers Owens-Illinois offers you in different sizes, styles and shapes. Once you select the ones exactly right for your products, our packaging specialists will design an appealing label and closure combination for you.

Have a highly individualized Duraglas sales-package economically by using stock-mold containers. And, regardless of market conditions, you can't afford not to give your product the advantages of selling impact at the point of sale.

This sparkling new Contoure Line is available in 5 popular sizes—1-, 2-, 4-, 6- and 8-ounce.

Duraglas packages are protectors of quality

OWENS-ILLINOIS GLASS COMPANY • TOLEDO 1, OHIO • BRANCHES IN PRINCIPAL CITIES

"Smart Cookies"

WEAR CRYSTAL CLEAR WRAPS!

WHERE shelf competition is keen, Salerno quality is clearly seen — through Crystal Tube cellophane wraps . . . for CTC displays your food product most appealingly in "see-through" wraps.

Crystal's flexible operation supplies colorful, transparent packaging to suit your needs . . . lustrous cellophane, in continuous rolls or sheet form, for high speed application. Seals in freshness and flavor . . . maintains eye-appeal . . . produces buy-appeal.

Crystal Tube packaging men are always at your service—always ready with suggestions for putting new appeal into *your* product, through transparent packaging.

making things *Crystal* clear!

CONVERTERS, PRINTERS AND DESIGNERS OF TRANSPARENT PACKAGING
CTC
T. M. Reg.

CRYSTAL TUBE CORPORATION
6625 W. DIVERSEY AVE., CHICAGO 35, ILL.
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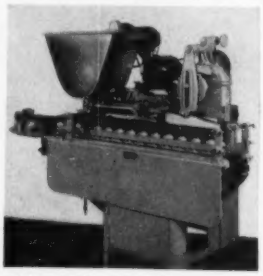
Branch Offices in New York, Philadelphia, St. Louis, Minneapolis, Detroit, Louisville, Milwaukee, Dallas and Los Angeles.
Cellophane Tubes, Pouches, Bags and Envelopes; Polyethylene Bags plain and printed. Also printed roll stock and sheets in Cellophane, Polyethylene, Acetate and Foil, Pliofilm . . . Utility Rolls, Holiday Bands and FLEXIBLE BARRIER MATERIALS

Equipment and materials

spring to prevent fraying of the cord. Standard 110-volt, AC power is used and the unit is reported to have full U.L. approval. For further information write the manufacturer, Dept. 69.

A HIGH-SPEED FROZEN-BERRY FILLER with greater flexibility than the company's previous machines has been introduced by the Elgin Mfg. Co., Elgin, Ill. The new Triple F frozen-food filling machine has been expressly designed for filling sliced strawberries and similar products into either composite packages or 211 x 400 metal cans. The new high-speed twin-piston filler has a continuous moving conveyor and stop-package filling. Its fine-fill adjustment may be operated while the machine is in operation. The agitator is separately driven. The attachment to convert this filler to use on 211 x 400 metal cans is said to require only a few minutes to install. This attachment and a machine-driven disk discharge are listed as optional equipment.



MESH-WINDOW POTATO BAGS made of wet-strength paper in triplex construction are now available in 50-lb. size from the Union Bag & Paper Corp., 233 Broadway, New York. This new Vent-Vu bag has a large front window for ventilation and product visibility. Mesh covering the window is bonded between the paper walls, making the mesh window an integral part of the bag. The bag has a satchel bottom and can be two-color printed.

ATTRACTIVE WAXED-PAPER CONTAINERS designed to provide eye appeal in the retail store and to serve as containers which can be brought directly to the dinner table have been produced in a dainty pink and green dogwood flower pattern by Continental Can Co., Inc., 100 E. 42 St., New York 17, N. Y. The floral pattern for these "Table Treat" containers was selected after it proved a 10-to-one favorite with women in tests with six patterns. This line of wax coated containers is said to be a solution to problems of packaging and displaying products with a bloody or liquid content, from liver to salads to sauerkraut. They are adaptable to hand filling by retailers and to machine filling on a number of filling machines. The containers use lids with transparent windows and are available in 8-, 12- and 16-oz. sizes and in a special 3-oz. sampler size.

BACON AND FRANKFURTER PACKAGING FILM designated 75BF Pliofilm has been developed to meet the requirements of meat packers in the protective, visual packaging of these meats. The manufacturer reports that the new Pliofilm offers dimensional stability, making possible a tight wrap which will not shrink or stretch on exposure to moisture, plus ability to stand abuse both in the packing house and the self-service market. It is said to be impervious to grease and moisture, and completely transparent.

Goodyear Tire & Rubber Co. calls its new 75BF Pliofilm a

Makes good merchandise sell better . . .
Costume jewelry gets a new lift—pre-packaged in tough, transparent Kodapak Sheet. This gifted material shows clearly the details of design and workmanship . . . enhances the sparkle of brilliants, the gleam of metals . . . adds an eye-appealing, sales-compelling brilliance all its own.
Kodapak Sheet
"Kodapak" is a trade-mark
For further information, please consult your local representative or write: Cellulose Products Division, Eastman Kodak Company, Rochester 4, N.Y.
Sales offices: New York, Chicago, Dallas. Sales representatives: Cleveland, Providence. Distributors: San Francisco, Los Angeles, Portland, Seattle (Wilson & Geo. Meyer & Co.) Toronto, Montreal (Paper Sales, Ltd.)

LABEL SEAL-IT

FOLDS-SEALS LABELS

CUTS LABOR COSTS! Label Seal-It takes the hand-work out of packaging . . . eliminates pins and stapling. *One* operator does the work of *two!* These savings alone actually pay for Label Seal-It in a few short months. Cuts label expense too . . . uses *ordinary* printer's enamel stock instead of special thermoplastic coated papers. Seals all heat sealable bag materials—Cellophane Polyethylene, Pliofilm, etc.

NEWLY IMPROVED—*now equipped with latest type vacuum pickup which insures individual label feeding!* Built-in cam driven pump—no extra vacuum equipment to buy.

Let us prove Label Seal-It is your *best* buy!
Full line of Heat Seal-It machines available.

★ GLOBE ★
HEAT-SEAL, INC.
HEAT SEAL-IT DIVISION

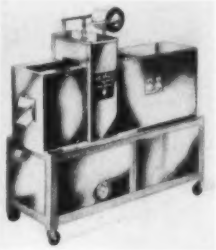
Write for Circular

3380 SOUTH ROBERTSON BLVD., LOS ANGELES 34, CALIFORNIA

Equipment and materials

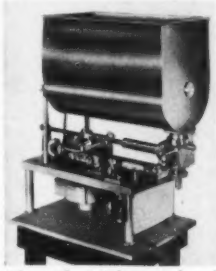
companion material to 80 FM-1 Pliofilm used on self-service meats at retail-store level and 140 FM Pliofilm widely used in stretch-wrapping of sausage items in packing houses.

THE HEAT-SEALING FLAT PACK WRAPPER offered by General Machinery Corp., Sheboygan, Wis., is designed to wrap anything of a flat nature, including food, hardware or textiles, in a flat, heat-sealed package with a flat crimp seal along all four sides. No card, U-board or tray is needed to support the package. All types of heat-sealing films or waxed paper may be used. With hand feed, speeds up to 35 packages per min. are said to be possible; an infeed conveyor can raise packaging speed to 60 packages per min. An electric-eye register control is available to register a printed design on one side of the package.



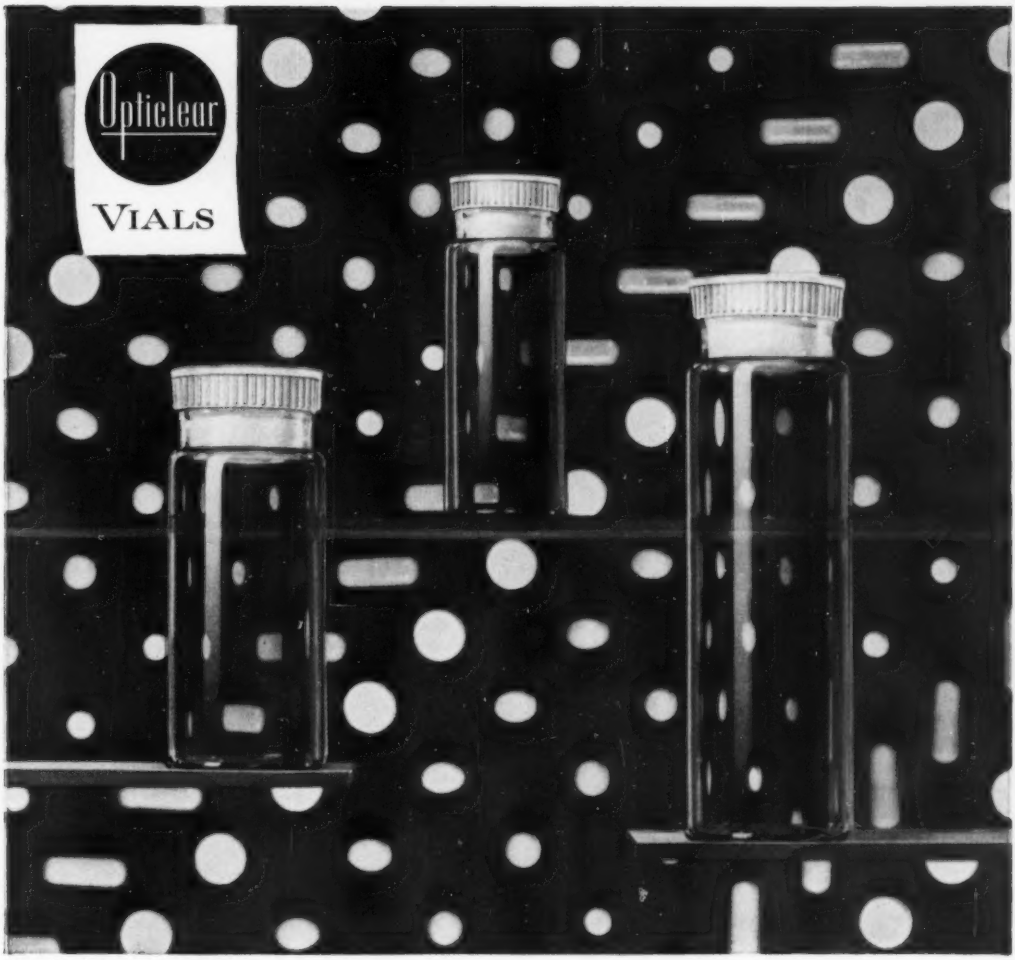
The standard machine comes equipped with variable-speed drive; ⅓-h.p., 110/220 volt, 60-cycle motor; thermostatic heat control; indicator lights for motor and heater; and caster mounting.

A LOW-COST PORTABLE FILLER that can be moved and operated by one man is offered by F. L. Burt Co., 571 Seventh St., San Francisco 3, Calif. The filler is of the piston type, for use with liquids and semi-solids. The speed range is from 15 to 30 containers per min., with container fill ranging from 1 to 32 oz. Power for the ¾-h.p. motor is supplied by plugging into any light socket. The filler's control system permits the operator to stop it in the middle of a discharge stroke without stopping the motor.



The manufacturer states that the filler can be dismantled in 3 to 5 min. for easy and quick cleaning. The unit is sturdily constructed of acid-resistant materials, with stainless steel and nickel alloy contact parts. Its total weight complete is only 138 lb. Dimensions are 16 in. wide, 31 in. long and 33 in. high.

A NEW WAX-LIKE POLYMER named Alcowax, reported to have a number of properties applicable to packaging uses, has been announced by the Semet-Solvay Div., Allied Chemical & Dye Corp., 40 Rector St., New York 6, N. Y. The new polymer, derived from ethylene, is now being produced on a small-plant scale in Buffalo, N. Y., where the company is building a full-scale plant for the production of this material. Alcowax is reported to have wax-like hardness. The melting point is approximately 100 deg. F., but its moderately low-melt viscosity is said to make it readily dispersible in various types of waxes and other mediums at moderately low temperatures. Its color is translucent white and it is described as tasteless, non-toxic and substantially odorless. An emulsifiable modification is in development. Suggested packaging uses for Alcowax include coating for paper, the lining of metal containers and as an ingredient in printing ink or varnish. Full operation of the new plant is expected some time in 1953.



Gleaming, lustrous Opticlear Vials keep contents fresh and clean.

Pack in beauty – pack in KIMBLE OPTICLEAR VIALS

Show off the superiority of your product, and give it safe protection in handsome Kimble Opticlear Vials.

These trim, sparkling containers keep contents fresh, dry and clean . . . free from dust, dirt and moisture.

Inside a Kimble Opticlear Vial your product can be safely stored in refrigerators or bathroom medicine cabinets. New, resilient, plastic stoppers keep contents dry with a positive moisture-proof seal.

Distinctive Opticlear Vials improve the salability of every dry product packaged in them. See how attractive your product will look, too. Write now, and we'll send you free samples of the sizes you use.

KIMBLE GLASS COMPANY

Toledo 1, Ohio

Subsidiary of Owens-Illinois Glass Company

Plants and people

Alfred B. Brackett has retired as manager of packaging research for the Birds Eye Div. of **General Foods Corp.**, New York, after 23 years of service with the company. Mr. Brackett joined Birds Eye just as it was becoming a part of the Postum Cereal Co., predecessor of General Foods Corp. One of his first assignments was the development of a rectangular, leakproof paper container for quick-frozen products. His research led to the introduction of a heat-sealed bag pack in which Birds Eye strawberries and peaches were marketed. In addition to his work in this country, Mr. Brackett has helped introduce quick-frozen food processing and packaging methods in foreign lands.

A. B. Brackett

Succeeding Mr. Brackett is William H. Enzie, formerly assistant packaging engineer for the Birds Eye Div. in New York.

The Allegheny Steel Band Co., Pittsburgh, Pa., manufacturer of steel strapping and accessories, has opened an office at 30 Church St., New York, as headquarters for sales in New England, New Jersey and Eastern New York. **Louis Frey** has been named district sales manager.

The American Can Co., New York, has been commended by the **California Canning Peach Assn.** in a resolution expressing appreciation of the firm's cooperation during the recent steel strike.

W. F. Nesbit has been appointed sales manager of the Eastern Div. of **Arkell & Smiths**, Canajoharie, N. Y., multi-wall bag manufacturers. Mr. Nesbit will headquarter in New York.

Marathon Corp., Menasha, Wis., has established a General Packaging Dept. to expand its operations beyond the food-packaging fields in which it is now active. **Richard B. Simpson** has been named sales manager of the new department and **Robert Clark** has been named a merchandising manager. Emphasis will be given specialty packages and packaging materials in research, manufacturing and sales.

R. B. Simpson

The D & R (Donofrio-Roosevelt) Industries, Inc., has moved to larger quarters at 2360 W. Jefferson Ave., Detroit, Mich. The new quarters are being equipped with automatic and semi-automatic equipment for the packaging and processing of automotive and aircraft parts for domestic storage and export shipment to the Armed Forces.

The Crystal Tube Corp., Chicago, has appointed **John O'Brian** as its Southeastern representative. Mr. O'Brian will promote the sale of Crystal Tube's line of converted cellophane, polyethylene and Pliofilm packaging materials in Florida, Georgia and Western Tennessee. He will headquarter in Atlanta, Ga.

Dura-Lee Corp., Kansas City, Mo., has appointed **Les Best** as its Texas and Oklahoma sales representative. Mr. Best will handle the entire Dura-Lee line of converted bags and wraps, including polyethylene, foil, special laminations, and polyethylene- and saran-coated papers.

The Dobeckmun Co., Cleveland, Ohio, has appointed **W. W. Clark** to the position of assistant to the vice president for distribution. Mr. Clark, formerly sales manager of the Cleveland Sales Div., has been succeeded in that position by **Fraser E. Wilson,** packaging specialist.

W. W. Clark (left) and F. E. Wilson

E. I. du Pont de Nemours & Co., Wilmington, Del., has announced a program for improvement of cellophane manufacturing facilities at the company's Spruance cellophane plant, Richmond, Va. In addition, a one-story building will be constructed to provide office space for the technical division, and storage and shipping facilities will be enlarged.

The Chase Bag Co., Chicago, Ill., has appointed **Bud E. Simonton** superintendent of its Toledo factory. **John F. Hilarski**, assistant superintendent, will assist Mr. Simonton and continue to be responsible for textile-bag operation at Toledo.

Sun Chemical Corp., Long Island City, N. Y., has announced the formation of General Printing Ink Co., New England Div., with headquarters at 87 Binney St., Cambridge, Mass. This new unit, with manufacturing facilities in Cambridge and Norwood, will provide service to buyers of printing inks in Maine, New Hampshire, Vermont, Massachusetts, Connecticut and Rhode Island. **Philip J. Kirby** will manage the new unit and **Jack P. Mather** will serve in an advisory capacity for the next few months before taking over a new post at the company's executives offices in Long Island City.

Alfred J. Fava, director of sales of the General Products Group of **American Machine & Foundry Co.**, New York, has been elected president of the **National Assn. of Food Equipment Mfrs.** Mr. Fava is also a member of the Food Preparations & Service Machines & Devices Industry Advisory Committee, Office of Price Stabilization.

A. J. Fava

John G. Robinson, vice president of **Container Corp. of America**, Chicago, has been appointed vice chairman of the board of directors and chief executive officer of **California Container Corp.**, a wholly owned subsidiary. Mr. Robinson will headquarter in the San Francisco executive offices. **William P. Hooker**, president of California Container Corp. will continue in that office.

Henry G. Van der Eb has been appointed as general manager of the company's Philadelphia folding carton plant. **Donald H. Brewer** of **O. B. Andrews Co.**, Chattanooga, Tenn., a Container Corp. subsidiary, has been appointed general manager of a newly created Folding Carton & Boxboard Div.

The Modern Art Printing Co., New York, which specializes in the decoration of polyethylene bottles, has expanded facilities and moved to a modern plant at 34-36 56 St., Woodside 77, L. I., N. Y.

Henry Myers has been appointed sales manager of **Mosstype Corp.**, New York, maker of rubber printing plates and continuous design rollers. Myers will headquarter at the company's main office in Brooklyn, N. Y. **Edward F. Kennedy** has been appointed to the field service staff. He will contact flexographic printers in Metropolitan New York and the New Jersey area.

H. Meyers

General Container Corp., manufacturer of Insta-Ties and Insta-Bands, the cellophane and paper ties and bands for vegetables, foodstuffs and nursery items, recently moved its plant from Los Angeles,

Get this valuable packaging book...

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you'll be interested in this treasure chest of sales stimulating packaging ideas. Contains practical information on the use of attractive corrugated packages as economical and effective point-of-purchase merchandising material, not only affording proper product protection but also serving as excellent product "salesmen." Send for your free copy of "Pack To Attract." Write, or mail coupon below, to HINDE & DAUCH, 5304-A, Decatur Street, Sandusky, Ohio.

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REGISTRATION CONTROL UNITS

Includes MECHANICAL DIFFERENTIAL
Accurately Controls Cut-off
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4 STANDARD UNITS *service*
any make or model Converting Machine

Complete packaged electro-mechanical control systems any of which can be adapted to any standard or special machine using the principles of drawer rollers and cut-off knife.

- Complete Engineering Service
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the only COMPLETE
Registration Control Line

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Plants and people

Calif., to 8055 S. E. 13th Ave., Portland, Ore. Insta-Ties and Insta-Bands will be sold by **Pack-Age Sales, Inc.**, throughout the world. Also announced by General Container Corp. is the appointment of **Stanley L. Mead** as vice president.

L. E. Hess

Just 25 years after starting with **The Sperry Corp.**, E. G. Staude Div., St. Paul, Minn., **L. E. Hess** announced his retirement from the company. Mr. Hess has been active in developing the sales organization of Sperry for the past 18 years.

T. Barry Hodge Co., packaging engineers, held an open house at the firm's new building on Industrial Rd., Addison, Ill. In addition to offices and display rooms, the new building provides ample space for the handling of products for export packaging.

Bruce W. Cook has been appointed Eastern Div. sales manager of the Paper Container Div. of **Continental Can Co.**, New York. Mr. Cook's area will include the New England, Middle Atlantic and Southwestern states, which are served by the company's sales offices in Philadelphia, New York and Boston. His headquarters will be in New York. **J. E. Perry** has been appointed plant manager of Continental's metal container plant at Syracuse. Mr. Perry was formerly Eastern Div. manager of quality control.

B. W. Cook

The Ketterlinus Lithographic Mfg. Co., Philadelphia, Pa., has moved into a newly constructed plant at Primos, a suburb of Philadelphia. The new building is of one-story construction.

Roy A. Rice has joined the Chicago sales staff of **Martin Driscoll & Co.**, Chicago ink manufacturers.

William W. Fitzhugh, Inc., New York, manufacturer of folding and set-up boxes, labels, envelopes and a variety of paper and board specialties, has announced the completion of a new building to house their Corrugated Div. The plant, located at Lakeview, Long Island, N. Y., will be equipped with modern machinery for the

How to Package
SMALL ITEMS

GET SAFETY and SALES
with LUSTEROID
Vials and Tubes

Now you can protect and merchandise products that are "too small" for ordinary packaging.

There's a LUSTEROID plastic container that's just right for carrying your small items to market. These crystal-clear vials and tubes are strong, tough, unbreakable. They display your product while protecting it. And they save money, too.

No labels to affix, because LUSTEROID is printable. You save on handling and shipping since LUSTEROID is so light in weight.

You have a wide choice in colors in standard diameters from ¼" to 1½" and in lengths up to 6". Cork, slip-on and screw-cap closures.

Write for samples and quotation today.

Plants and people

manufacture of corrugated containers and corrugated materials of every kind.

The Bemis Bro. Bag Co., St. Louis, Mo., has appointed **Judson Bemis** as director of central operations and **H. J. Wehrenbrecht** as director of southern operations. The positions have been created by Bemis as part of a reorganizational program to integrate the company's operations into geographical units. **O. M. Smith** succeeds Mr. Bemis as manager at the company's Minneapolis bag factory and sales division and **V. H. Watts** succeeds Mr. Wehrenbrecht as manager of the New Orleans plant and sales division.

J. Bemis (left) and H. J. Wehrenbrecht

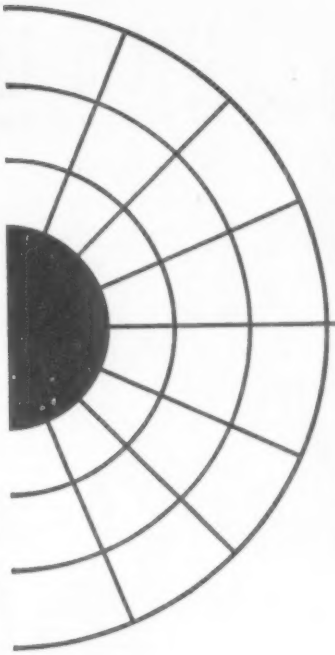
As director of central operations, Mr. Bemis will supervise bag factories and sales divisions in St. Louis, Indianapolis, Kansas City, Wichita, Omaha, Minneapolis and Chicago, as well as the bag factory and paper mill in Peoria. Mr. Wehrenbrecht, as director of southern operations, will be responsible for bag factories and sales divisions in Memphis, Houston, New Orleans, Mobile and Jacksonville, Fla.

The General Box Co., Des Plaines, Ill., has elected two new directors: **E. J. Sommers**, president of **Mid-States Steel & Wire Co.** of Crawfordsville, Ind., and **Allen A. Ward**, treasurer of General Box.

Charles D. Kupersmith has been appointed director of sales and advertising of the **Merit Display Co.**, New York. Mr. Kupersmith will specialize in the creation and merchandising of point-of-purchase displays.

Eugene A. Hildreth has been elected a director of **National Fruit Product Co., Inc.**, Winchester, Va., and will serve as assistant to the president. Mr. Hildreth, formerly associated with the Owens-Illinois Glass Co., has been active in all branches of the food industry and is a former president of the Canning Machinery & Supplies Assn.

The Oxford Paper Co., New York, has appointed **Herman G. Schanche** as assistant in Woods Operation to the execu-



Bemis Now Offers You Quantacolor

to give your printed brand "MORE SELL"

You can get the sales benefits of QUANTACOLOR in your branded bags FROM BEMIS ONLY. It adds nothing to your bag cost. This is another extra Bemis service to make your brand sell better and more profitably.

What is Quantacolor?

Quantacolor is a scientific yardstick for making certain that the colors combined in any design or product are in harmony . . . that they *look right* together. Nature creates colors in four Quantas . . . and there are all colors of the spectrum in each Quanta. Colors from the same Quanta are *pleasing* together. Colors from different Quantas are *displeasing* together. Very slight changes, sometimes scarcely noticeable, will put a color into the Quanta that *agrees* with its companion colors.

Does Quantacolor actually help sell?

It has proved its sales value in many types of packaging and merchandise.

Does Quantacolor mean you must redesign your brand?

Not at all. Maybe your brand colors are in perfect harmony now. If so, Quantacolor will confirm it. If not, a slight change of a color will probably suffice.

Whether you use Bemis Paper Bags, Cotton Bags, Burlap Bags or Plastic Bags . . . you will benefit from Quantacolor. Ask for details.

Bemis

BEMIS BRO. BAG CO.
408 Pine St., Box 49,
St. Louis 2, Mo.

Give me details about Quantacolor and how it will help sales.

*Name*_____

*Company*_____

*Address*_____

*City, Zone, State*_____

Provides vacuum or air blast free from oil . . . for printing and packaging machinery

The Dexter-Conde DRI-AIR Pump

Here at last, is a pump that never needs to be lubricated. It won't freeze up because of somebody's oversight. It has no oil cups to be kept filled and turned down (or to be expensively forgotten). It won't accumulate greasy dirt; won't create a fire hazard, and it does away completely with oil streaking.

Its double-sealed grease-packed New Departure ball bearings operate under normal atmospheric pressure and are completely removed from the pump chamber. The pump is built with close tolerances and has no gaskets to leak or blow.

The carbon-graphite alloy vanes are stick-proof, warp-proof and chemically inert. They provide their own lubrication and become increasingly efficient as pump is used.

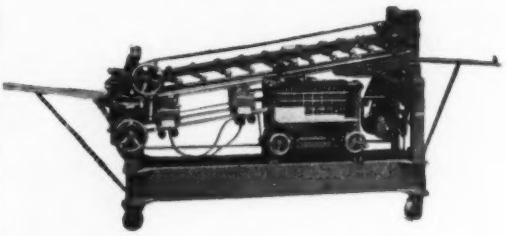
The Dexter-Conde DRI-AIR Pump makes a nice, clean installation. It is available in three sizes, one or a combination of which will solve your vacuum or air pressure problem.

Read these advantages again and, if your present pump equipment offers less, it will pay you to send for full information about the Dexter-Conde DRI-AIR Pump.

Dexter Folder Company
General Sales Offices
330 West 42nd Street, New York 36, N. Y.

CUT LABELING COSTS

WITH NEW WAY QUICK-CHANGE UNITS



For use where small quantities of various size cylindrical containers are to be labeled, we recommend our Model V—and where long runs at high speed are required, the sturdy E (illustrated) is supreme. Continuous label feed—adjustable over a wide range—will handle glass, tin or fiber, long-neck bottles, flat or dome tops, containers with bale ears or jug handles. Write for special bulletin and prices.

THE BEST OF Everything IN LABELING AND CASING EQUIPMENT

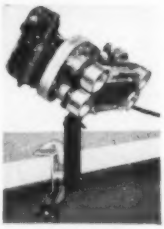
Chisholm-Ryder
COMPANY OF PENNSYLVANIA
HANOVER, PENNSYLVANIA

ZOEN

MILITARY PACKAGING of generating equipment is speeded by DOUGHBOY Power Hand Sealers at the Minneapolis plant of D. W. Onan & Co.

NEW PORTABLE HEAT SEALER ELIMINATES "SKIPPING"

Here's an inexpensive, lightweight heat sealer that gives you all the advantages of heavy installations. It's the new DOUGHBOY Power Hand Sealer, a motor-driven rotary sealer that guarantees a continuous dwell for the entire length of the seal. Adequate speed (200 inches per minute) enables operator to seal every inch uniformly, with none of the lapses encountered with manually controlled devices.



Mounting bracket converts sealer into a bench-type unit.

Three models handle all types of heat-seal materials. Further details sent on request to

DOUGHBOY INDUSTRIES, INC.
Mechanical Division • New Richmond, Wisconsin

Plants and people

tive vice president. Organization of the Oxford Woods Dept. will remain as it is, with **R. R. Drummond** as general manager and **H. L. Beach** as assistant general manager. Oxford has also announced several changes in the sales organization of the company. **Oliver S. Barrie** has retired from active administration of the company's Western sales operations, but will continue with the company in an advisory capacity and as a director of **Oxford Miami Paper Co.** **Thomas F. Nolan, Jr.**, will be Western sales manager of both the Oxford and Oxford Miami Paper companies and **Samuel D. Dillon** will be his assistant.

Hugh S. Ferguson has been elected president and chief executive officer of the **Dewey & Almy Chemical Co.**, Cambridge, Mass. Mr. **Ferguson** succeeds **Bradley Dewey**, president since the company was founded in 1919. Mr. Dewey has been elected chairman of the board of directors. Mr. Ferguson has had an active part in all phases of the company's growth and served formerly as executive vice president.

H. S. Ferguson

Edward P. Cohn has been appointed general sales manager of **Phoenix Industries, Inc.**, Indianapolis, Ind., manufacturer of aluminum-foil containers for cooked, frozen and ready-to-cook food products under the trade name of Foil Master Pak-Ware.

The Rhinelander Paper Co., Rhinelander, Wis., manufacturer of glassine and greaseproof papers, has appointed **Charles M. Drolet** as sales representative for the New York area.

Stone Container Corp., Chicago, Ill., has appointed **Joseph Kenny** to the sales staff of the company's Mansfield, Ohio corrugated box division.

P. E. Roggi has joined the staff of **Whitman Plastics Corp.**, Lynn, Mass., as technical director in charge of developmental and laboratory control work.

Fabricon Products, Inc., River Rouge, Mich., has transferred **Jack Joyce** to its New York City office as sales representative for Fabricon in Metropolitan New York, Baltimore, Md., Washington, D. C., and Richmond, Va. **Paul Morrissey** succeeds Mr. Joyce as sales representative for Fabricon in Ohio, Indiana, Kentucky and West Virginia, with headquarters in

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MADE TO YOUR EXACT SPECIFICATIONS

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Manufacturers of Cardboard Partitions

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BIG BAGS

MAKES 'EM BIG

Perfect for Drumliners, the PO-5 makes bags from flat or gussuted tubing from 2"-27" wide, and up to 60" long. Complete automatic delivery and stacking of giant bags at rates up to 50 per minute.

MAKES 'EM SMALL

Equipped to handle multiple widths — as many as four rolls of tubing simultaneously within stated size ranges thereby obtaining exceptional production rates.

POLYETHYLENE

Big Brother to the famous PO-2, the PO-5 incorporates all the dependable features that have produced consistently fine quality bags. Built for BIG things . . . BIG Bags . . . BIG Production Savings!

ROTO BAG MACHINE CORPORATION

130 EAST 13th STREET - NEW YORK 3, N. Y.

Don't take chances with food wrappers

PLAY SAFE WITH

NON-TOXIC

PATAPAR

When selecting a packaging material that is to come in direct contact **with food, make sure it has no toxic qualities that could be imparted to the food.**

You can have utmost confidence in Patapar Vegetable Parchment. This high wet-strength, grease-resisting parchment is absolutely NON-TOXIC. The basic Patapar is 100% pure cellulose, tasteless, odorless — nothing added. It meets every requirement of the Federal Food and Drug Act.

During the past 67 years, Patapar has faithfully protected butter, cheese, poultry, ice cream, fish, celery, sausage, ham, lard, bacon, margarine and many other foods. It is furnished in sheets or rolls — plain or beautifully printed with colorful designs.

Paterson Parchment Paper Company
Bristol, Pennsylvania
West Coast Plant:
340 Bryant Street, San Francisco 7
Sales Offices: New York, Chicago
Headquarters for Vegetable Parchment Since 1885

When you use Patapar you can be sure you are safe.

Patapar®
Vegetable Parchment
HI-WET-STRENGTH · GREASE-RESISTING

Plants and people

the branch office at Cincinnati, Ohio.

Peter A. Toma has been appointed art director at Fabricon. The art department headed by Mr. Toma is responsible for creation of designs and production of finished artwork for use on waxed-paper bread wrappers, printed cellophane, cellophane bags and other packaging materials produced by Fabricon's five plants.

The Technical Tape Corp., New York and Montreal manufacturer of adhesive, cellophane and surgical tapes, has extended its manufacturing facilities to the Pacific Coast through the establishment of a newly incorporated subsidiary, **Technical Tape Corp. of Calif.** The new company will produce specialty tapes in a new plant at Burbank, Calif. Operations will be under **Norton Heyman.**

Williamson Adhesives, Inc., formerly of Chicago, has announced the occupancy of its new plant at 8220 Kimball Ave., Smokie, Ill. The new plant is reported to double the facilities of the firm.

C. A. Rietz

Charles A. Rietz has been appointed to the new position of research and development director of **Interchemical Corp.**, Printing Ink Div., New York, and will locate at the divisional headquarters office in New York. **Victor J. Porth, Jr.**, succeeds Mr. Rietz as manager at Interchemical's Elizabeth, N. J., factory.

Clarence M. Frazier, a director and vice president of **Food Machinery & Chemical Corp.**, San Jose, Calif., died at his home on Nov. 10 after a long illness. Mr. Frazier joined FMC in 1941 after a successful career in the merchandising field. During the war he served as FMC's Washington representative and later assumed direction of the firm's Canning Machinery Divs., the Florida Div., the Packing Equipment Div. and the Stokes & Smith Co., an FMC subsidiary.

C. M. Frazier

William R. Shaffer, one of the founders of **The New Haven Pulp & Board Co.**, New Haven, Conn., died on Nov. 16 in his home after a long illness. Mr. Shaffer was 85 years old.

Bowled over . . .

by cutting problems?

Cutting a problem? Maybe it doesn't strike you as such. If you cut anything from rolls — cellophane to asbestos — felt to cardboard — plastic to duck — it is no problem for a Beck Sheeter. It is well worth investigating. Think it over . . . then write.

CHARLES BECK MACHINE CORPORATION
406 N. 13th Street BECK Philadelphia 8, Pa.

The story of the

SERVING INDUSTRY . . . SERVING AMERICA

You are always close to Continental Can with its 65 plants in the United States, Canada and Cuba, 17 field research laboratories and 63 sales offices.

magic strawberry "basket"

Place strawberries in this "basket" in June, and they're every bit as red, sweet and juicy in December.

The "basket" that performs this magic is a Continental can.

Frozen strawberries have been on the market for some years. But they've never had a container that offers so many advantages as this enameled, hermetically-sealed can.

The housewife will find that frozen fruits and berries packed in cans retain their rich color because they have been packed in the absence of air. The can is easily and quickly defrosted, and opened with no loss of juice.

To the packer, Continental cans mean speeded-up filling operations and no leakage problem. They mean better quality-control because the package is sealed under a "steam vacuum." And they often reduce costs because immersion-type freezing can be employed.

These new Continental cans are now being used for packing frozen peaches, berries and cherries as well as strawberries . . . and canned frozen vegetables will be next. There is every reason to believe that the magic "basket" developed by Continental will do as much for the growers of these products as cans for frozen juices have done for the citrus industry.

CONTINENTAL CAN COMPANY

CONTINENTAL CAN BUILDING

100 E. 42nd ST., NEW YORK 17, N. Y.

TIN CANS

FIBRE DRUMS

PAPER CONTAINERS

STEEL PAILS AND DRUMS

CAPS AND CORK

DECKWARE

For your information

The first semi-annual meeting of the **Industrial Bag & Cover Assn.** was held Nov. 14 and 15 in Chicago and was presided over by **H. C. Davis,** Bemis Bros. Bag Co., president of the association. The Nov. 14 session was devoted to an informal discussion of proposed rules to be presented to the Federal Trade Commission with reference to an application for an industry-wide trade-practice conference. **Wilbur W. Sacra,** representing the Federal Trade Commission; **Albert E. Sawey,** counsel to the association, and **Philip O. Deitsch,** administrative office of the association, led this discussion. The Nov. 15 session centered around 1953 educational and promotional plans.

The American Standards Assn. re-elected **Roger E. Gay** of the Bristol Brass Corp. as president and **Edward T. Gushee** of the Detroit Edison Co. as vice president at its annual meeting held Nov. 25 in New York. Newly elected directors are: **J. L. Cranwell,** assistant vice president of the Pennsylvania Railroad Co., representing the Assn. of American Railroads; **Dr. W. R. G. Baker,** vice president of the Electronics Div., General Electric Co., representing the Radio-Television Mfrs. Assn., and **George A. Delaney,** chief engineer of the Pontiac Motor Div., General Motors Corp., representing the Society of Automotive Engineers. Re-elected directors are: **J. H. McElhinney,** vice president of the Wheeling Steel Corp., representing the American Iron & Steel Institute; **R. M. Gates,** president of the Air Preheater Corp., representing the American Society of Mechanical Engineers, and **R. Oakley Kennedy,** member-at-large.

The Eastern Conservation Committee of the **Wastepaper Consuming Industries** has announced the appointment of **Joseph S. Miller,** president of New Haven Pulp & Board Co. and the Bartgis Bros. Co., as chairman. He succeeds **George E. Dyke,** president of Robert Gair Co., Inc., who served as chairman for seven years. Other committee officers appointed are: vice chairman, **Ralph A. Wilkins,** vice president of the Bird & Son, Inc.; treasurer, **J. R. Kennedy,** president of the Federal Paper Board Co.; secretary, **W. Page Selby** of Sonoco Products Co. Executive committee members are Messrs. Miller, Kennedy, Dyke and **Henry D. Schmidt,** president of Schmidt & Ault Paper Co. Temporary regional chairmen to serve as members of the board of directors are: **J. C. LaGrua,** vice president of the National Folding Box Co.; **A. B. Huyssoon,** vice president of the Continental Paper Co.; **Myron Edwards,** Kieckhefer Container Corp.; and **P. C. Coggeshall,** Sonoco Products Co. Other members of the board of directors include: **W. G. Latham,** president, Fort Orange Paper Co.; **Frank E. Brown,** president, Manchester Board & Paper Co.; **F. S. Crysler,** general manager, Container Corp. of America; **Anthony Desiderio,** president, Clifton Paper Board Co.; **Earle Weaver,** manager, International Paper Co.; **David F. Lawless,** treasurer, Lawless Bros. Paper Mills, Inc.; and **J. E. Smith, Sr.,** president, Chesapeake Paperboard Co. **Colley S. Baker** was re-appointed to direct activities from the New York offices.

The annual meeting of the **Canning Machinery & Supplies Assn.** will be held in the West Ballroom of the Conrad Hilton Hotel, Chicago, on Sunday, Feb. 22, at 10 a.m., to coincide with the organization's 46th annual exhibit and National Canners' Assn. convention. Also announced was a Past Presidents' Dinner to be held Feb. 20, at the Blackstone.

A 64-page book entitled "Packaging Manual for Self-Service Meats" has just been published as a result of an extensive study of meat-packaging operations in supermarkets by the **Goodyear Tire & Rubber Co.'s** Pliofilm Dept. This well-illustrated booklet shows and explains procedures recommended by Goodyear for wrapping each of the more-common cuts of meat. It is aimed primarily toward cutting packaging costs by the use of Pliofilm for all meat-packaging requirements, without the necessity of stocking large quantities of different types of film. There are also suggestions for better meat displays in the supermarket. Copies of the book can be had from Goodyear's Pliofilm Dept., Film, Foam and Flooring Div., Akron 16, Ohio.

The Research Division of **Continental Can Co., Inc.,** has issued Research Bulletin #31, entitled "Vacuum in Canned Foods—Its Significance and Its Measurement," by **J. M. Boyd** and **J. H. Bock,**

The Package Designers Council held its second dinner meeting Nov. 18 at which the aims of this new organization were presented to a group of invited guests representing leading package supplier firms. **Jim Nash,** president of PDC, pointed out the significance of package design in developing the basic retail units which he called the keystone of the vast and complex activity that has been estimated to add up to 10 billion dollars a year in packaging services, supplies and equipment in the United States. Those attending were presented with copies of PDC's by-laws, which described classes of membership:

Active ($100 a year), for individual practicing package designers. Associate ($50 a year), for persons in related fields, such as packaging engineers, industrial designers, teachers, art directors, etc. Junior ($25 a year), for beginners not yet accredited for active membership. Student ($5 a year), for art students with an interest in package design as a profession. Press ($5 a year), for publication people interested in packaging problems. Corporate ($250 a year), for organizations interested in sponsoring the aims and fair practices of the package designing profession and to include business associations, advertising agencies, suppliers of packaging materials and equipment, etc.

Fellowships may be conferred on active members for distinguished service to the designing profession or to the Council with the privilege of using the initials F.P.D.C. Provision is made also for honorary membership and foreign corresponding members to include distinguished designers and persons associated with package design in foreign countries.

Further aims and plans were discussed by **Frank Gianninoto,** executive vice president, and **Gerald Stahl,** one of the

What's doing

Jan. 19-22—**Plant Maintenance Show and Conference,** Public Auditorium, Cleveland, Ohio.

Jan. 20-30—**The Institute of Packaging,** Packaging Exhibition and Convention, National Hall, Olympia, London.

Jan. 21-23—**The Society of Plastic Engineers, Inc.,** Ninth Annual Technical Conference, Hotel Statler, Boston.

Jan. 23—**Pennsylvania State Ice Cream Conference,** Pennsylvania State College, State College, Pa.

Feb. 9-11—**American Management Assn.,** Marketing Conference, Hotel Statler, New York.

Feb. 15-20—**American Paper & Pulp Assn.,** Waldorf-Astoria Hotel, New York.

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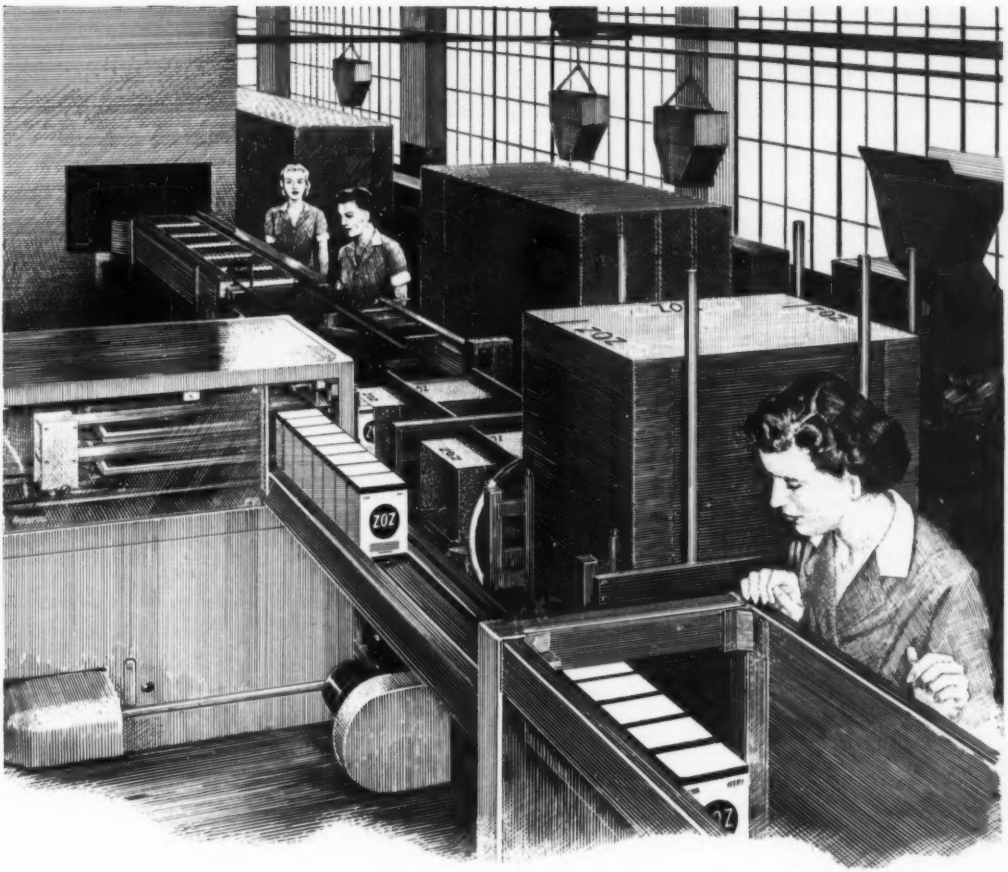
founding members. **Egmont Arens,** secretary, described PDC's plans for sponsoring a package design competition. Guests called on by the chair for their suggestions on how PDC may be mutually helpful through an interchange of ideas between suppliers and designers included: **Taylor Bouchelle,** Lord Baltimore Press; **Kenwood Dixon,** Robert Gair Co.; **H. W. Hardy,** Forbes Lithograph Mfg. Co.; **George Muth,** Continental Can Co.; **Gustav L. Nordstrom,** National Paper Box Mfrs. Assn.; **Oscar Whitehouse,** Label Mfrs. National Assn.

Three sub-groups were formed by the **Flexographic Printing Committee** of the **Packaging Institute** to undertake projects of special interest to printers and converters of packaging materials. **Robert Zuckerman** of Kidder Press Co. will head one group to study the problem of reconditioning film and paper during the printing process to restore normal moisture loss. **Norman Cooper** of Bensing Bros. & Deeney will act as chairman of another group to study the problem of "ghosting" or off-setting of ink. The third group, headed by **Alexander R. Bradie** of Mosstype Corp., will undertake an educational program to expedite the acceptance of the name "flexographic" to designate the process formerly called "aniline."

The Malayan Tin Bureau of Washington, D. C., has just published a 20-page, illustrated booklet in three colors, entitled "There is Plenty of Tin." The booklet is part of an educational program designed by the tin-producing industry of Malaya to promote a better understanding between that country, which has tin mines that are said to yield more than 35% of the world supply, and the United States. The booklet denies that tin is scarce. A free copy may be obtained by writing the Malayan Tin Bureau, Dept. 80, 1028 Connecticut Ave., Washington, D. C.

A "Guide to Pressure Packaging" has just been issued in the form of a 38-page, plastic-bound booklet by the Crown Can Division of **Crown Cork & Seal Co.,** Erie Ave. & H St., Philadelphia 34, Pa. Although specifically concerned with the applications for Crown's Spra-Tainer light-weight propulsion can in the pressure-packaging field, the booklet discusses marketing possibilities, development of products, loading techniques and the technical principles behind various types of pressure dispensing and lists related services and suppliers.



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U. S. patents digest

This digest includes each month the more important patents of interest to those who are concerned with packaging materials. Copies of patents are available from the U. S. Patent Office, Washington, at 25 cents each in currency, money order or certified check; postage stamps are not accepted.

Edited by H. A. Levey

Detachable-Label Bag, J. G. Barnes (to Bemis Bro. Bag Co., St. Louis, Mo.). U. S. 2,614,349, Oct. 21. A paper bag comprising a length of paper tubing having a bottom closure and having a printed paper strip narrower than the width of the bag extending from bottom to top of bag on the outside of bag and secured to bag at bottom closure and by narrow strips of adhesive at the longitudinal margins of label strip.

Container-Forming Apparatus, C. E. Palmer (to Package Machinery Co., East Longmeadow, Mass.). U. S. 2,614,466, Oct. 21. Apparatus for folding into carton form a blank having a bottom panel, two relatively angularly disposed pairs of side-wall forming panels and end extensions on the free edges of one of pairs of wall panels, comprising a die structure, a reciprocally mounted mandrel, means for effecting reciprocation of mandrel in operative relation to die structure thereby to move mandrel through said die structure to press said blank through die structure.

Article-Orienting Mechanism for Labeling Machines, C. E. Keil (to Geo. I. Meyer Mfg. Co., Cudahy, Wis.). U. S. 2,614,681, Oct. 21. In an article-orienting apparatus of the kind wherein successive articles, each having a projecting stop element, are delivered in succession to a spotting station, having article-rotating means at the spotting station including a pair of spaced drive rolls engageable with the periphery of the article for rotating the latter, two spaced abutment rolls disposed respectively at opposite sides of a diameter of the article passing midway of the drive rolls.

Hypochlorite Bleach Container, A. C. Stoneman (to Purex Corp., Ltd., South Gate, Calif.). U. S. 2,614,690, Oct. 21. A hypochlorite bleach solution-containing bottle having a cap made of an aluminum-base alloy consisting essentially of aluminum alloyed with between 0.1 to 0.5% chromium and between about 0.5 and 4.5% magnesium.

Can Carrier with Foldable Handle, G. H. Parker (to Container Corp. of America, Chicago, Ill.). U. S. 2,614,737, Oct. 21. A can carrier formed of paperboard or the like, comprising a pair of parallel compartments separated by a centrally disposed partition, each of said compartments having a top wall, the inner edges of the top walls terminating adjacent opposite faces of the partition, with a flange extending upwardly from the inner edge of each top wall.

Vacuum-Pack Machine, F. G. Pasotti (to Ball Bros. Co., a corporation of Indiana). U. S. 2,614,739, Oct. 21. In a machine for sealing containers under vacuum, a movable support for containers to be sealed, means for moving said support, an air bell movable with support, means for moving bell to engage and disengage a container on support and an automatic mechanism positioned to engage a container.

Weighing and Packaging Machine, L. D. Caron, Jr., and W. J. Hoenecke (to Terminal Packaging Co., Milwaukee, Wis.). U. S. 2,614,786, Oct. 21. Mechanism for measuring out an accurately weighed portion of non-free-flowing material, comprising a scale having a weighing platform, an endless belt conveyor having a feed end and having a discharge end mounted on platform with normally closed shut-off gate mounted on said platform at the discharge end of belt conveyor for movement therewith.

Universal Weigher and Bagger, R. S. Grand (to Food Machinery & Chemical Corp., a corporation of Delaware). U. S. 2,614,787, Oct. 21. In combination: a scale, having a weighing hopper and a manually controlled bottom gate, means forming a port through which units of product are fed into hopper, a door for closing said port and means responsive to the lowering of hopper by the delivery thereto of a given weight of product.

Apparatus for Separating Conjointly Gathered Bag-Tube Walls, W. W. Rowe, C. L. Spangler and R. C. Frick (to Cincinnati Industries, Inc., Lockland, Ohio). U. S. 2,615,375, Oct. 28. In apparatus for separating bag-tube walls, means for continuously moving a supply of bag tubing, a separating roll to be positioned within and in engagement with one wall of bag tubing to cause separation of walls thereof.

Divisible Carton, C. D. Fallert and G. E. Whalley (to Gaylord Container Corp., St. Louis, Mo.). U. S. 2,614,745, Oct. 21. A completely sealed one-piece rigid carton constituting a pair of divisible smaller connected-together rigid cartons, said carton comprising one-piece end walls each having upper and lower marginal flaps co-extensive in length, the free ends of which flaps are in alignment and terminate substantially midway of the length of each smaller carton.

Carton, W. P. Frankenstein, Cincinnati, Ohio. U. S. 2,614,746, Oct. 21. In a box or carton formed from a knock-down single blank of paperboard material comprising a base, upstanding walls from the sides of base, each of said walls comprising a top-wall member of appreciable width, from the longitudinal edges of which depend inner and outer wall members depending to the base, with one of said wall members of each wall secured to base and the other members of at least two opposed walls secured to base inwardly of the edges thereof, a distance equal to the width of the top-wall member.

Device for Automatically Removing Window Cut-Outs from Blanks, A. Pelikan (to Federal Carton Corp., North Bergen, N. J.). U. S. 2,615,376, Oct. 28. Means for removing window areas from blanks wherein the outlines of the window areas had been previously scored, said means comprising at least a pair of conveyor tapes for the blanks and at least one drum member, drum member being rotatively supported and positioned above and intermediate the pair of tapes.

Apparatus for Making Sealed Packages, R. A. Farrell, W. G. Mueller and A. Bartes, Jr. (to Marathon Corp., Rothschild, Wis.). U. S. 2,615,377, Oct. 28. A machine for making leakproof packages comprising means for positioning a tubular carton having end flaps, means for supporting said flaps in an extended, substantially horizontal position, means for positioning a heat-sealable membrane over the carton end with the margins thereof overlapping at least portions of said flaps.

Apparatus for Assembling Multiple-Part Egg Containers and the Like, S. Bergstein, Cincinnati, Ohio. U. S. 2,615,378, Oct. 28. In apparatus for assembling containers comprising an outer band and an inner partition element, means for moving said outer band blank in a predetermined path of travel, said means comprising a plurality of chains moving in timed relationship having aligned lugs for engaging the trailing edges of the outer band blanks.

Multiple-Chamber Package, M. R. Fields (to Abbott Laboratories, North Chicago, Ill.). U. S. 2,615,448, Oct. 28. A closure for a multiple-compartment package comprising, in combination: an annular portion, a central septum integrally united around its periphery with said annular portion, a sealing flange integrally united with an outer edge of annular portion, the inner diameter of flange being greater than the outer diameter of septum to leave an annular groove between them.

Device for Wrapping Hollow Packages, J. J. McDermott (to American Viscose Corp., Wilmington, Del.). U. S. 2,615,606, Oct. 28. An apparatus for applying a cover to a hollow package comprising supporting means, two concentric, at least partially hollow, rigid structures, each having a cylindrical wall concentric with that of the other, both structures being carried by supporting means and held in relatively fixed position thereby.

Container with Reclosure and Shield Device, A. J. White (to American Can Co., New York, N. Y.). U. S. 2,615,610, Oct. 28. A container having in a metallic wall section thereof a score line setting off a depressible area bendable inwardly to produce a dispensing opening for container.

Chick-Shipping Container, P. F. Paul (to The Patent & Licensing Corp., New York, N. Y.). U. S. 2,615,611, Oct. 28. In a chick box of flexible fibreboard, a body portion comprising a body member, upwardly extending side and end walls, intersecting partition members extending between side and end

walls, each of said partition members having lower edges thereof spaced from bottom and extending upwardly to top of box.

Container with Telescoping Closure, H. C. Reeser (to The Patent & Licensing Corp., New York, N. Y.). U. S. 2,615,613, Oct. 28. A box comprising a body portion having upstanding side and end walls and a cover portion having depending side and end walls for telescoping engagement with side and end walls of body portion.

Fungus-Inhibiting Container for Peat Moss and the Like, F. R. Linda (to St. Regis Paper Co., New York, N. Y.). U. S. 2,615,614, Oct. 28. A multiwall bag for packaging peat moss and related products, comprising a plurality of paper tubes, disposed one within another and secured together at at least one end thereof to form a permanent closure, inner surface of innermost ply of which is coated with an adherent and substantially moisture- and fungus-impervious layer of synthetic plastic composition.

Carton-Folding Apparatus and Method, H. Ahlmeyer and W. D. Sherman (to Robert Gair Co., Inc., New York, N. Y.). U. S. 2,616,341, Nov. 4. Apparatus for folding an elongated blank of sheet material to form a bottle-carrying carton which comprises means for feeding said blank through said apparatus, means for forming two sets of bottle pockets in blank and collapsing said pockets between adjacent portions of the blank, means for folding and securing together to form a handle section the ends of said blank with said collapsed pockets on the outer sides thereof, and means for reversing the collapsed position of said pockets relative to said handle section.

Nursing Outfit, P. S. Madsen and G. W. Goodson (to The Seamless Rubber Co., New Haven, Conn.). U. S. 2,616,581, Nov. 4. In a nursing bottle, the combination of a bottle having a mouth, a nursing nipple, a retaining screw ring holding the nipple over the bottle mouth and a protective cap of the push-on type extending over nipple and retaining ring.

Bag Opener for Packaging Machines, L. M. Gaugen (to Paul L. Karstrom Co., a corporation of Illinois). U. S. 2,616,603, Nov. 4. A bag-filling machine comprising a stationary horizontal table having a discharge spout, a measuring unit arranged over said table and comprising a plurality of measuring devices rotatable successively to a position above said spout to discharge material therethrough, a vertical shaft carrying said measuring unit and a pipe for delivering fluid to said spout.

Package-Filling Machine, J. L. Ferguson (to J. L. Ferguson Co., Joliet, Ill.). U. S. 2,616,605, Nov. 4. In an apparatus for filling material into containers, a material supply, measuring and filling means, container conveyor means in the form of a single endless belt, means for momentarily halting a predetermined plurality of containers at a filling zone on belt while material is fed simultaneously into each plurality by said filling means while conveyor is continuously progressed and containers are resting thereon.

Receptacle-Filling Machine, P. C. Beehler, Jr. (to Chisholm-Ryder Co., Inc., Niagara Falls, N. Y.). U. S. 2,616,606, Nov. 4. In a receptacle filler having a funnel member arranged to rotate about a generally vertical axis and having an annular series of substantially equally spaced funnels arranged to discharge into a progression of cans arranged therebelow, each funnel forming a chute of horizontally elongated arcuate form concentric with axis, chutes being of substantially equal means for feeding predetermined amounts of liquid through said chutes into said cans.

Bottle Carrier, E. L. Arneson (to Morris Paper Mills, Chicago, Ill.). U. S. 2,616,611, Nov. 4. In a flexible, foldably collapsible paperboard carrier for bottles or like articles which is characterized by a pair of generally similar, integrally connected sections, each including a central upright panel, which panels are disposed in generally parallel relation in the operative condition of the carrier.

Container, M. R. Fields (to Abbott Laboratories, North Chicago, Ill.). U. S. 2,617,419, Nov. 11. A dispensing container for powdered medicament comprising in combination: two elements telescopically assembled to define a chamber, one of said elements being a tubular member having a concave end wall at one end and a tapered rabbet comprising a substantial portion of the internal tubular wall at the other end thereof, the other element being an internally fitting cup having an exterior tapered wall, a straight internal wall and a perforated end wall having a plurality of outwardly tapered perforations.

Blade-Dispensing Magazine, M. D. Benedict, Jr., L. and M. J. Shnitzler (to The Gillette Co., a corporation of Delaware). U. S. 2,617,520, Nov. 11. A blade-dispensing magazine comprising a base portion having a pair of longitudinally spaced

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blade-locating ribs with outwardly and upwardly inclined inner edges, a cover having a finger opening, longitudinally slotted blades arranged in stacked and oppositely staggered relation on said ribs within the magazine and spring means pressing downwardly upon the uppermost blade of the stack whereby, under spring pressure, the uppermost blade may be engaged by the user's finger or thumb.

Packaging Buffing Compound and Like Materials, E. T. Candee (to The Lea Mfg. Co., a corporation of Conn.). U. S. 2,617,521, Nov. 11. A package of greaseless adhesive-containing buffing compound comprising a paperboard cylinder forming the side walls of a container, a layer of substantially non-porous moisture-impermeable material lining the interior cylindrical wall surface of said cylinder, said layer being free from the tendency to adhere and having a rigid metal end closure.

Suture Package, H. F. Zoller (to Ethicon Suture Laboratories, Inc., a corporation of New Jersey). U. S. 2,617,523, Nov. 11. A surgical suture package comprising an envelope and a suture carrier slidable in the envelope, carrier including two elongated panels, one shorter than the other, and integrally hinged along a longitudinal edge and a plurality of suture strands wound on said short panel, each strand wound only once over one end of the shorter panel and having their ends turned around and up from opposite sides of the other end of said shorter panel so that one end of each strand is disposed between two panels, the two panels pressing against the strands disposed between them when the carrier is in the envelope.

Master Shipping Container, L. J. Rosenberg (to Gaylord Container Corp., St. Louis, Mo.). U. S. 2,617,524, Nov. 11. A master shipping container comprising an upwardly opening lower section of rectangular cross-section, a series of trays of counterpart dimensions adapted to receive a plurality of articles of substantially uniform shape, said trays being superposed one on another in said lower section to form a stack extending a substantial distance thereabove.

Display Device, W. A. Lang (to Monsanto Chemical Co., St. Louis, Mo.). U. S. 2,617,550, Nov. 11. A combination display and shipping device comprising an open-ended shipping box and an open-ended display box of such size as to be insertable within the shipping box.

Prelined Container Having Multiple Cells, R. M. Bergstein, Cincinnati, Ohio. U. S. 2,617,576, Nov. 11. A prelined container in flat-folded form comprising a tubed outer boxboard carton having enclosing body walls and end-closure flaps, said tubed carton having within it a composite liner comprising a plurality of tubular liner structures formed of material more flexible than boxboard.

Combination Package, R. O. Tardiff (to Breyer Ice Cream Co., Philadelphia, Pa.). U. S. 2,617,577, Nov. 11. A rectangular tubular carton having a top wall, bottom wall, pair of side walls with closure flaps at each end thereof and a tray snugly and telescopically disposed within said carton.

Carton Construction, H. J. Fischer (to The United States Printing & Lithograph Co., Norwood, Ohio). U. S. 2,617,578, Nov. 11. A carton formed from a single blank of sheet material which comprises a front panel, side panels hinged along opposite side edges of front panel, a rectangular rear panel hinged along the edge of one side panel opposite front panel, top and bottom panels hinged to top and bottom edges of rear panel, respectively.

Collapsible Lined Tray or Carton, K. T. Buttery (to Sutherland Paper Co., Kalamazoo, Mich.). U. S. 2,617,579, Nov. 11. A tray or carton formed of an integral blank comprising a bottom and side and end walls hingedly connected thereto, corner flaps hingedly connected to the ends of end walls, side walls having slits opening at their end edges and extending diagonally outward, said corner flaps having tongues on their end edges and extending diagonally outward.

Self-Locking Folding Box, R. B. Meller (to Bemiss-Jason Co., San Francisco, Calif.). U. S. 2,617,580, Nov. 11. An improved glueless corner construction for folding boxes for assembling, in corner-forming relationship, a main panel, two wall panels hinged to the main panel along fold lines forming an angle, a flap hinged to one wall panel along the side of said wall panel, the flap being adapted to lie face to face with other wall panel when the panels are in corner-forming position.

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CARTON STAPLING MACHINE. Bulletin on a portable, manually operated stapling machine for closing all types of corrugated and fibre cartons from the outside after they have been filled. International Staple & Machine Co. **(A-351)**

SEALERS AND LABELERS FOR BAGS. Folder illustrates and describes various automatic and semi-automatic manual machines for sealing cellophane and similar bags, and for applying labels to them. Globe Heat-Seal, Inc. **(A-352)**

BAG MAKING MACHINES. Bulletin illustrates and describes two machines, one for making bags from paper, foil, glassine, and other materials, and the other for making multi-wall bags. H. H. Heinrich, Inc. **(A-353)**

ROTARY HEAT SEALER. Folder discusses the Doughboy rotary heat sealer and devices used in conjunction with it for coding and hole punching bags, plus a compression unit for sealing. Doughboy Industries, Inc. **(A-354)**

LABEL PRINTER AND ADDRESSER. Descriptive folder on the Weber "Tag-O-Graph," a machine which automatically prints shipping labels, addresses them and cuts them to size. Weber Addressing Machine Co. **(A-355)**

MERCURY "CELLO-SEALER." Data and specification sheet on a high-speed sealer for cellophane and other heat sealing films and foils, which is available as a bench model or on a stand. Mercury Heat Sealing Equipment Co. **(A-356)**

CONTROLLED EMBOSSING. Explanation of the operating features of the two-roll calender type embossing machines manufactured by Dilts Machine Works, Div. of The Black-Clawson Co. **(A-357)**

MARKING EQUIPMENT FOR INDUSTRY. Catalog with data on various marking machines, conveyor markers, multiwall bag printer, a corrugated and fiber shipping case printer, and several hand operated printers. Contains chart of available base-lock rubber type and price list. Industrial Marking Equipment Co. **(A-358)**

FLEXIBLE LAMINATED PAPERS. Portfolio contains sample sheets of creped, glass fibre-reinforced, and similar laminated papers for use in protective packaging. Cromwell Paper Co. **(A-359)**

VACUUM PACKAGING MACHINE. Specification sheet contains operating data on a semi-automatic unit which vacuumizes and heat-seals perishable products within transparent or opaque pouches. Standard Packaging Corp. **(A-360)**

GLUES, PASTES, AND GUMS. Brochure discusses the preperation and use of glues, pastes, and gums. Additional information on the storage and care of glue. National Adhesives, Div. of National Starch Products, Inc. **(A-361)**

"THERMAL IMPULSE" HEAT SEALERS. Bulletins explain the advantages of and show the method of operation of the various models of Vertrod "Thermal Impulse" heat sealers for plastic film and laminates. Data on alloy surface and Teflon-Fiberglas surface heater bars. Vertrod Corp. **(A-362)**

DIE CUTTING AND EMBOSSING PRINTING PRESS. Bulletin describes a versatile press that blanks, stamps, die cuts, creases, and embosses and which also does color printing on all paper stock from light board to heaviest board. The Chandler & Price Co. **(A-363)**

TRANSPARENT PLASTIC CONTAINERS. Bulletin illustrates twenty-three different plastic containers, some with metal lids or bases, others with lace edge insets. Weinman Brothers, Inc. **(A-364)**

CARTONING MACHINES. Folder shows a variety of fully automatic and semi-automatic continuous motion cartoning machines for handling products of different sizes and shapes. Standard-Knapp, Div. of Emhart Mfg. Co. **(A-365)**

LABEL IMPRINTER. Data on a machine which imprints price, code, style, or other information on roll-type labels, cuts them off, counts, and stacks them. Oliver Machinery Co. **(A-366)**

TEXTILE WRAPPING MACHINE. Folder contains descriptions of several machines for use in wrapping and sealing soft goods in cellophane and other films. Hayssen Mfg. Co. **(A-367)**

ROTARY PRINTING. Booklet contains extensive information on Champlain rotary presses for printing by rotogravure, aniline, and letter press. Data on auxiliary equipment and accessories. Champlain Co., Inc. **(A-368)**

WEIGHING AND FILLING MACHINES. Data on semi and fully-automatic "Elec-Tri-Pak" machines for precision weighing and filling a large variety of products into bags, cans, jars, cartons, and envelopes. Triangle Package Machinery Co. **(A-369)**

VIALS AND DRUG PACKAGING. Bulletin explains the advantages of using "Clearsite" clear or green plastic capsule vials for packaging pharmaceutical products. Cellu-plastic Corp. **(A-370)**

PACKAGING MACHINERY. Booklet on the various carton feeders, carton liners, weighers, sealers, and tight wrapping machines manufactured by Pneumatic Scale Corp., Ltd. **(A-371)**

BOX MAKING EQUIPMENT. Bulletin describes a single stayer and a duplex corner cutter for use in the manufacture of paper boxes. Hobbs Mfg. Co. **(A-372)**

AUTOMATIC BOTTLE CLEANER. Detailed information on the "Sanitair" automatic bottle cleaner for cleaning new containers by inverting and air blasting them. U. S. Bottlers Machinery Co. **(A-373)**

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AUTOMATIC SCREW CAPPERS. Folder illustrates and describes the features of several automatic and semi-automatic machines for sorting, feeding, and applying many sizes of screw caps to bottles, jars, and cans. Resina Automatic Machinery Co., Inc. (A-375)

75-POUND CAPACITY SCALES. Data on "Shadowgraph" and mechanical-indicating precision weighing scales with a 75-pound capacity range. The Exact Weight Scale Co. (A-376)

PROTECTIVE CUSHION WRAP. Booklet tells about "Sof-Rap," a new exterior-interior wrap and "Krepak," a single-ply crinkled interior wrap cushioning, both of which should interest manufacturers and packagers of hard goods. Nichols Paper Products Co. (A-377)

PREPACK HEAT SEALING EQUIPMENT. Series of seven bulletins on heat sealing equipment, closures, and sheet dispensers of use in prepackaging many vegetable and other products. Cleveland Lathe & Machine Co. (A-378)

TAG MARKER. Bulletin on a machine for preparing payroll piecework tags, coupons, and production tickets of the type widely used throughout the shoe, clothing, and other industries. Markem Machine Co. (A-379)

CELLULOSE FILM. Five informative little leaflets which discuss the fading of printing ink and the use of regenerated cellulose film for the direct wrapping of jellies, candies and dates, and for the packaging of metal products. British Cellophane, Ltd. (A-380)

OLIN CELLOPHANE. Description of the manufacturing facilities for cellophane and services offered cellophane users by Olin Cellophane Div., Ecusta Paper Corp. (A-381)

BAKELITE RESIN COATINGS. Booklet covers the entire scope of surface coatings based on formulations containing Bakelite resins. Tells factors to be considered in the use of modern coatings. Chart lists the qualities imparted to coatings by various types of resins. Bakelite Co., Div. of Union Carbide & Carbon Corp. (A-382)

INDUSTRIAL WRAPPING. Booklet traces the history of the company and explains how its special machinery and special grades of moisture and grease resistant and creped papers and tapes are used in packaging. Angier Corp. (A-383)

CELLOPHANE BAG MACHINE. Specification and data sheet on a machine for making flat and satchel-type bags from cellophane, paper, or a combination of the two materials. Hol-Bag, Inc. (A-384)

VIAL AND AMPOULE LABELER AND CODER. Details on the "Corliss" labeler and coder which automatically codes, labels, and neatly applies them to vials or ampoules. Potdevin Machine Co. (A-385)

"ALATHON" POLYTHENE RESINS. Booklet explains properties of "Alathon" polythene resins as they pertain to the packaging of foods, pharmaceuticals, cosmetics, chemicals, and other products. Lists forms available. E. I. du Pont de Nemours & Co., Inc. (A-386)

TWO-HEADED SEWING PEDESTAL FOR BAGS. Data on a rotary head unit for closing paper, cloth, or burlap bags after they have been filled. Unit eliminates shutdowns for bag changeover, twine breakage, etc. Richardson Scale Co. (A-387)

POLYETHYLENE FILM YIELD CALCULATOR. Handy folder shows for various gauges of polyethylene film, yield of sheeting in square yards, yield of sheeting in lineal yards, and yield of tubing in lineal inches. Durethene Corp. (A-388)

EXPORT PACKAGING EQUIPMENT. Descriptive folder on a silica gel and "Desiccite" dispenser head for barrels and air extracter and striping and corner marking units of value to packagers preparing export shipments. Cargo Packers. (A-389)

"DA-GLO" FLUORESCENT COLORS. Sample folder shows five popular "Da-Glo" fluorescent colors. Gives suggested uses and explains licensing procedure. Switzer Brothers, Inc. (A-390)

GUMMED BOX STAYS. Folder contains specifications and five representative samples of "Knowco" gummed box stay for use in the manufacture of set-up boxes. M. D. Knowlton Co. (A-391)

COLORED INDUSTRIAL TAPES. Fourteen varieties of industrial tapes are shown in folder on "Scotch" brand pressure-sensitive tapes. Uses of eight different colored tapes are given. Minnesota Mining and Manufacturing Co. (A-392)

PRODUCE PRE-PACKAGING POINTERS. Leaflet designed to help the retailer establish the proper pre-packaging procedure, and to select the proper grades of produce and packaging materials. Sylvania Division, American Viscose Corp. (A-393)

PACKAGING IN SARAN. Folder illustrates a number of food products which are successfully packaged in saran plastic film. Points out various advantages. Dow Chemical Co. (A-394)

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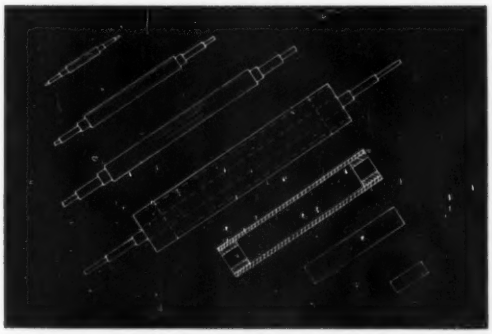

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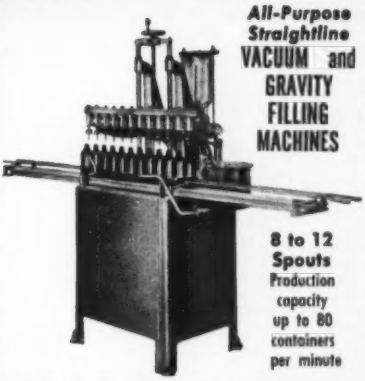

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Production capacity up to 80 containers per minute

Fills thin to viscous liquids (shampoos, syrup, mustard, etc.). Fully adjustable to handle containers ranging from fractional ounce to one gallon — all shapes and mouth diameters, (glass, tin or plastic) including sprinkler tops, open top cans and jars.

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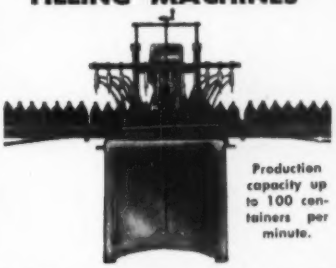

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Ideally suited for filling thin and viscous liquids as well as shampoos, in containers ranging from 1 ounce to 1 gallon in glass, and up to quarts in metal — all shapes and mouth diameters. Fully adjustable from one size container to another. Supplied with 10 foot automatic intake and discharge conveyor with variable speed drive control.

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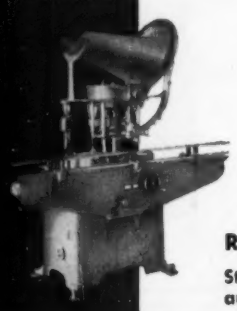

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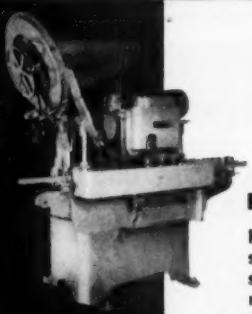

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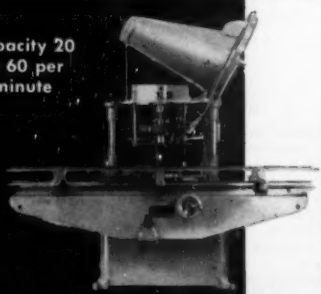
Capacity 20 to 60 per minute



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Packaging Exposition

Prompt and enthusiastic response by exhibitors to initial floor-plan mailings has led the American Management Assn. to predict that its 22nd National Packaging Exposition, to be held in Chicago's Navy Pier, April 20-23, will easily be the largest and best-attended show in the history of the event. Exhibit area reserved by 305 exhibitors already exceeds by 11% the total area of the record-breaking 1952 exposition, when 326 firms took 103,000 sq. ft. of floor space to display their packaging machines, equipment, materials, methods and services. The total gain in 1953 is expected to be 20%.

The four-day, Monday-through-Thursday exposition—an annual market place for packaging, packing and shipping in all industries—had almost 22,000 visitors attending in 1952 and was acclaimed one of the most impressive industrial shows ever held. This year's show will provide an additional 6 hrs. to enable full coverage by visitors.

The annual Packaging Conference, held at Navy Pier concurrently with the Packaging Exposition, will run for 11 hrs. during the first three days of the event. Program details are to be announced next month, but A. M. A. has indicated that more sessions will be held than formerly to permit more conferences appealing to the special needs of specific groups and industries. Topics will cover a broad range of subjects relating to packaging management and techniques, including merchandising, industrial packaging, high-speed production lines, training of personnel, etc. Three meeting rooms will be constructed at Navy Pier to accommodate an expected 1,500 packaging executives.

The Conference is open to both members and non-members of A. M. A. and the exposition is open to representatives of all types of businesses. Both events are designed for the executive and the specialist seeking methods to reduce costs, increase sales and step up efficiency.

An innovation at this year's Conference will be a "workshop" exhibit of materials useful to packaging management consisting of forms, brochures, instruction and training manuals, books, programs, reports, records and other printed matter on packaging, packing and shipping designed to increase operating efficiency. These ma-

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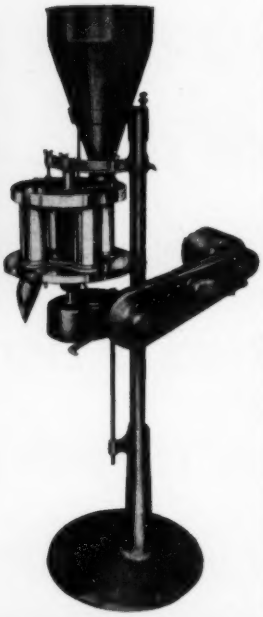

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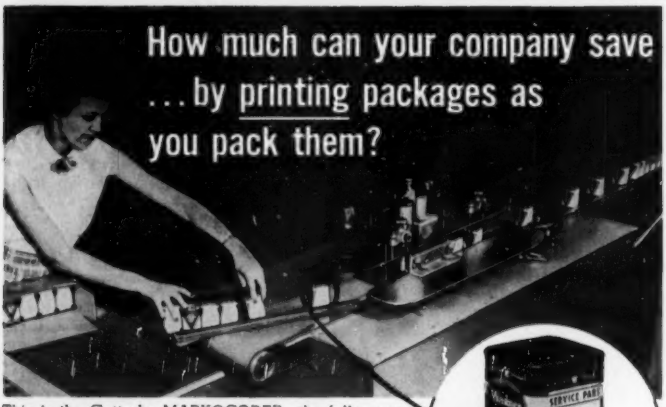

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The personnel of the Exhibitors Advisory Committee for the 1953 Exposition includes: Flloyd L. Triggs, Riegel Paper Corp.; John C. Clay, National Adhesives Div., National Starch Products, Inc.; Alan S. Cole, MODERN PACKAGING; Neil A. Fowler, General Box Co.; Roy E. Hanson, Milprint, Inc.; Marshall Haywood, Jr., Haywood Publishing Co.; David S. Hopping, Celanese Corp. of America; Malcolm P. Junkin, National Metal Edge Box Co.; Ben C. Lewis, Peters Machinery Co.; Horace Lloyd, Eastman Kodak Co.; Clarence F. Manning, Reynolds Metals Co.; Russ Matthews, Bakelite Co.; Paul Meelfeld, The Hinde & Dauch Paper Co.; Tom Miller, Package Machinery Co.; Edwin H. Schmitz, Standard-Knapp; LeRoy B. Steele, E. I. du Pont de Nemours & Co., Inc.; Glenn Stewart, Kalamazoo Vegetable Parchment Co.; M. W. Waggoner, Better Packages, Inc.; Richard Wellbrock, New Jersey Machine Corp.; Ben M. Williams, Gaylord Container Corp.

Members of the Packaging Conference Planning Council are John Warren, American Home Products Corp.; H. W. Bull, Dow Chemical Co.; Robert de S. Couch, General Foods Corp.; E. F. Dickey, Honeggers' & Co., Inc.; Edgar J. Forio, Coca-Cola Co.; Lee R. Forker, Quaker State Oil Refining Corp.; F. Richard Holtz, Eastman Kodak Co.; J. L. Knapton, California & Hawaiian Sugar Refining Corp., Ltd.; Stanley W. MacKenzie, U. S. Rubber Co.; A. Douglas Murphy, Standard Oil Co. (New Jersey); F. W. Newbury, Pepperell Mfg. Co.; Sam E. Noble, Chattanooga Medicine Co.; Ralph A. O'Reilly, Jr., General Motors Corp.; Donald W. Pennock, Carrier Corp.; M. Crawford Pollock, C. A. Swanson & Sons; Norman S. Rabb, Stop & Shop, Inc.; R. Chester Reed, Texas Co.; W. L. Romney, Procter & Gamble Co.; C. L. Rumberger, H. J. Heinz; P. O. Vogt, General Electric; John R. Whitaker, American Stores Co.

First glass aerosol

(This article continued from page 93)

of the pressure package during shipping, retailing and home storage.

One-hand operation is particularly advantageous with a moth spray. With the previous Larvex pump-spray it was necessary to hold the bottle with one hand and pump with

the other, making it difficult to reach into the corners of the clothing where moth larvae most likely lurk.

Loading and labeling

The Zonite Corp. has installed its own semi-automatic line in its New Brunswick, N.J., plant for loading the Larvex container. Larvex is filled into the bottles by conventional means. The valve assembly is put on manually and the cap is crimped on. The bottles are then placed in the fibreboard canister and the metal-end top is seamed on. The containers are then conveyed to the loading equipment, which pressure fills the propellant into the container. Complete details of the assembly and loading operations are not being disclosed by the company at this time. The fact that Zonite is doing its own loading implies that volume output is involved and that special equipment is required.

The Larvex safety canister employs a wrap-around label similar in color and typography to the labels used on the regular glass bottles. Thus the Larvex Finger-Tip Spray package readily takes its place along with other packages in the family. This should be an important merchandising asset in view of the acceptance already so well established for regular Larvex. At the same time, the distinctive canister and the attractive orange-colored plastic valve assembly immediately identify the container as a self-dispensing, jet-powered package.

The label strongly features use instructions, how long to spray and what safety precautions are required. Briefly, these instructions advise a spray distance of 12 inches. A square foot of fabric, it is pointed out, should be sprayed for about 10 seconds. (About 5½ minutes of continuous spraying can be obtained from one 16-oz. bottle.) Users are advised that ½- and 1-gal. non-pressurized bottles, applied with a hand spray, are more economical for large pieces, such as rugs and furniture. The cautionary instructions warn that the container should not be tampered with or exposed to temperatures above 100 deg. F. or below freezing. Prior to disposal, the container should be empty and all pressure should be released. Rough handling, of course, should be avoided.

Distribution of the Larvex pressure package started this month. Its novel

SAVE TIME — 11 seconds was average time for sealing these cartons the "Snake Tape Way". Yet, these "TWO Strips" make a stronger closure.

SAVE DAMAGE - So strong is strap-like Snake Tape, that it is used to reinforce packages that "get it in the end".

SAVE HANDLING COSTS — Here, Snake Tape substitutes for steel . . . makes ONE package out of four! Try Snake Tape for unitizing your packages. Send for test sample.

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FREE ( ) 20 yd. sample Snake Tape and literature.

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.....(NAME, TITLE).....

Clip this to your letterhead.

features are certain to raise challenging questions for other packagers. Questions will be answered and potentials revealed only by the test of time. There will undoubtedly be limitations as well as advantages in adapting the new principles for use with other products.

One item of concern will be cost. The Zonite Corp. states its pressure package will cost the same as the standard Larvex package that incorporates a hand spray. It will cost more, naturally, than the plain bottle without a spray. Plus merchandising factors that justify the package are increased convenience and, probably, greater economy in use. The great boom in popularity of all types of jet-propelled products, of course, indicates that there will be important interest marketwise.

As far as the future of the three-phase pressure package is concerned, it is particularly significant that the ratio of propellant to active ingredient is said to be lower than that of any other type of pressure package yet introduced. The lower the pressure, within practical limits of function, the less the demand made on package protection to offset bursting action. It is this fact that may hold out far-reaching promise to products that must use a glass container. Also, with the amount of propellant reduced, greater capacity is afforded in the container for the product. It would not be surprising at a future date to see some very small three-phase-type glass pressure-packs being used for a variety of products. This applies particularly to items where the amount of propellant required in the conventional small container would have allowed very little space for the product.

CREDITS: *Research and development work, Arthur D. Little, Inc., Memorial Drive at Kendall Square, Cambridge 42, Mass. All-plastic valve molded by the Calmar Co., 6800 McKinley Ave., Los Angeles 1, Calif., using Dow Styron. Bottles, Brockway Glass Co., Inc., Seventh Ave., Brockway, Pa. Fibreboard canisters developed and produced by American Can Co., 100 Park Ave., New York. "Freon-114" propellant, E. I. du Pont de Nemours & Co., Inc., Wilmington, Del. Pressure-loading equipment, The Mojonnier-Dawson Co., 9150 Fullerton Ave., Franklin Park, Ill. Capping machine, Crown Cork & Seal Co., Eastern Ave. and Kresson St., Baltimore, Md. Product filler, Packer Machinery Corp., 34 Irving Pl., New York.*

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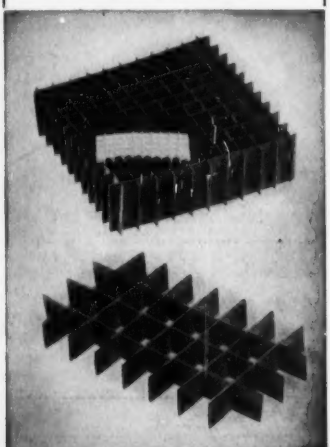

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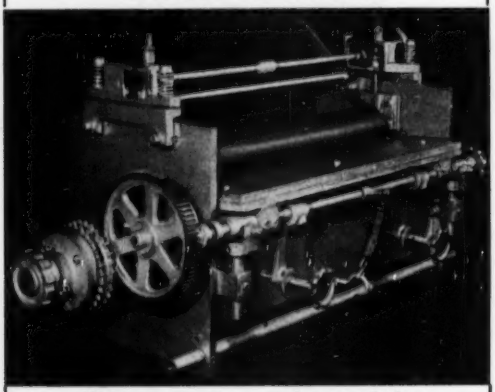

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Disposable injectables

(*This article continued from page* 112)
surgeon's highly trained hands may be clumsy in performing an unaccustomed or awkward manipulation.

Squeeze-bottle syringes

The complicating effects of the requirement for aspiration may be realized by examining some recent disposable-syringe devices designed for subcutaneous or intradermal injection, where aspiration is not a necessity. These units are in effect little more than needle-equipped squeeze devices of miniature size carrying doses up to perhaps 0.5-cc. They are used primarily for local anesthetics administered before blood-transfusion (or donation) needles are inserted.

The design simplicity of improved squeeze-bottle syringes may eventually be applied to larger units for penicillin and other commonly used parenterals. One squeeze-tube syringe uses an injection-molded ampoule of flexible polyethylene resin which looks like a miniature collapsible tube with a long neck. The double-pointed needle is set in this neck in a miniature sliding stopper. Pushing the needle back with the needle cover forces the needle butt through a diaphragm seal into the dose and the tiny syringe is ready to administer 0.5-cc. of a local anesthetic. Such handy subcutaneous injection units might encourage doctors to use more frequently the not really necessary but very desirable local anesthetics, thus enlarging the market for these drugs.

The successful use of flexible polyethylene resin, made without plasticizers, for containing minute quantities of drugs will be significant because the demand for vapor impenetrability is greatest for the smallest container. It would imply that larger containers for parenterals could be made of material thin enough to be squeezable, if the squeeze-bottle technique is wanted. Aspiration provisions could be made if the neck of the squeeze bottle beyond the sealing diaphragm could be flexed like a medicine-dropper bulb independently of the dose container.

Such discussion is pure conjecture, but it is quite certain that parenteral packaging, under the pressure of competition, has been advancing rapidly. Those close to developments insist that in application of ingenuity

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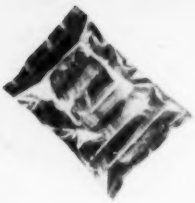

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and perfection of materials, only a beginning has been made in this new direction of precision packaging.

CREDITS: *Pfizer—"Steraject" glass cartridges, Kimble Glass, Div., Owens-Illinois Glass Co., Toledo, Ohio, and T. C. Wheaton Co., 165 Broadway, New York. Rubber plunger, aluminum cartridge seals and piercable closure membrane, The West Co., Phoenixville, Pa. Cartridge filler, Arenco Machine Co., Inc., 25 W. 43 St., New York 36, N. Y. Seal capper, Aluminum Seal Co., Richmond, Ind., and The West Co. Gauging machine used on glass cartridges, Ampoule Machine Co., 38-09 24th Ave., Long Island City, N. Y. Physician's Steraject kit case, Brecher Bros., 708 Broadway, New York.* **Upjohn** *—Glass and plastic disposable syringe, Becton, Dickinson & Co., Rutherford, N. J. Disposable polyethylene syringe, R. W. Ogle & Co., 250 N. Janita Ave., Los Angeles 4, Calif.* **Squibb**—*"Unimatic" and "Duomatic" syringe, Becton, Dickinson & Co.* **Schenley**—*Polyethylene disposable syringe, R. W. Ogle & Co. Raw polyethylene granules for Ogle syringe supplied by E. I. du Pont de Nemours & Co., Inc., Polychemicals Dept., Wilmington, Del., and Bakelite Co., Div. Union Carbide & Carbon Corp., 30 E. 42 St., New York 17, N. Y.*

Group meets at sea

Members of the Packaging Advisory Committee of the National Security Industrial Assn. studied packaging and preservation problems under simulated battle conditions at sea aboard the aircraft carrier, USS Midway, to obtain a better understanding of situations peculiar to supplies afloat.

The second day at sea was devoted to a complete air exercise in which squadrons simulated attacks, bombing, strafing, etc., utilizing both jet and prop craft and various ammunition types. Collateral observance by the group included break-out of packaged ammunition and problems caused by packaging techniques; support of communication by electronic spares and the importance of package protection; techniques employed in the preservation practice which accompanies serial torpedo cycle and re-stowing. An opportunity was afforded to review supply support of line action under the most realistic conditions short of actual combat. As a result of this exercise at sea, it is believed that both industry and the military will have a more realistic knowledge of the problems that are involved in the safe delivery of materials.

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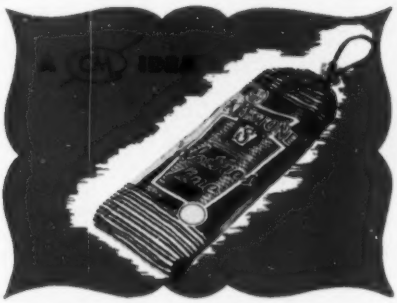

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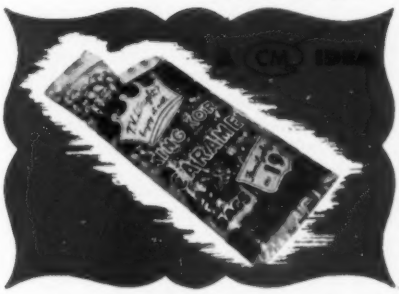

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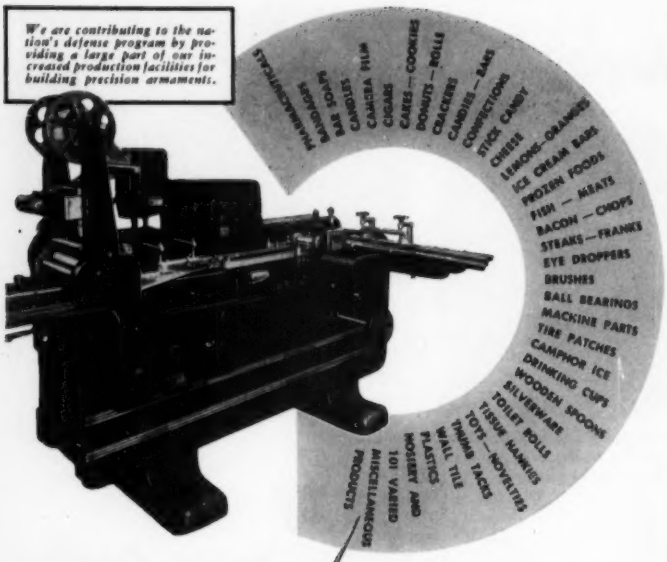

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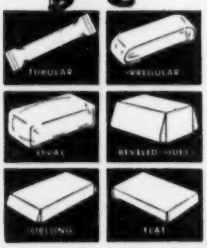

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Salesworthy notions

(*This article continued from page* 123) give the shopper the true value of the item.

Traum has managed to get the brand name, the function of the item, its composition, several important features, dimensions and price all on the front of the envelope without cluttering the space. On the back are additional instructions which make possible a more finished job.

The distinctive feature about Irontex patches—the fact that they are ironed on rather than sewn—is indicated not only in the copy and the brand name, but in the illustration. The envelope for the sew-in pockets is quite similar in appearance and stresses the quality of the item, its utility and ease of application.

Traum put a small open window in its denim and corduroy patch packs, which gives color at a glance and enables the shopper to test the material for quality by feel. The fabrics used for these patches are the same quality to be found in most good work or play clothes and the manufacturer knows that if the shopper can check on this for herself, the item is as good as sold.

Traum's sock patches presented one special problem. They are circular in shape, as befits all good sock patches, and they must be seen to be sold as an impulse item. The company packages 36 patches in a small heat-sealed polyethylene envelope which is translucent enough to show the texture of the knitted fabric and its color. The film is then stapled by machine to a merchandise card which again displays the simple instructional copy and company name, together with the line drawing showing the electric-iron point poised ready to be pressed down on the patch over the sock hole.

Another example of versatility in packaging is the new addition to the firm's Hiawatha sewing-thread line. The new thread, Cordonnet, is a decorative cordé developed especially for sewing-machine use. It has been spooled on a long, narrow cylinder for convenience in transferring it to a sewing-machine bobbin. The spool is manually carded like a hinge to a folded piece of paperboard carrying illustrations for use and explanatory copy. Unusual placement of the spool makes the finished package look like a novelty booklet. The thread is machine wound

and cellophane wrapped, which gives it complete visibility with full protection. While the three-dimensional thread pack gets first attention, the booklet design of the package prompts the impulse shopper to turn to the well-arranged, illustrated copy.

Name tape is a big item in the Traum line and while there is a steady demand for this conservative notion, Traum has improved its sales prospects by adding a second convenience feature over and above the method of application. This is the Traum laundry-marking pen—a ballpoint pen with a cartridge of Carter's special ink.

The separate tape package, containing 180 in. of ½-in. tape, is cellophane wrapped and inserted in a printed, die-cut card folded in three. The middle portion of the card is cut to hold the tape, while one of the two sides folds back over the other, completely covering the back part of the cellophane wrap, and stapled. This offers perfect protection to the tape and holds it in place in the cut-out. The cellophane, which allows the tape to be seen without being handled, cannot loosen in the pack, so that the tape remains undamaged and fresh despite continuous handling. Soiled notions slow up sales and cut down volume for both dealer and manufacturer.

The tape pen is available in combination with a 360-in. length of name tape for $1. Every effort was made to get a solid package that would resist soil and Traum thinks this one does. Although laundry-marking equipment is inexpensive, people do not buy it very often and the package for the pen was designed so that with reasonable care it will last as long as the tape and the pen. Printed in the new scheme, a die-cut platform set in a paperboard base holds pen and tape and gives basic copy clearly visible through a fitted acetate lid. Complete instructions are printed on the bottom of the box.

Reviewing their progress in the packaging program, company officials are satisfied that they have developed an integrated line of packages which will directly enhance the company name as well as the products they protect. In each case a plus value has been extracted from an intrinsically inexpensive packaging medium. In addition, the color scheme has given the promotion department

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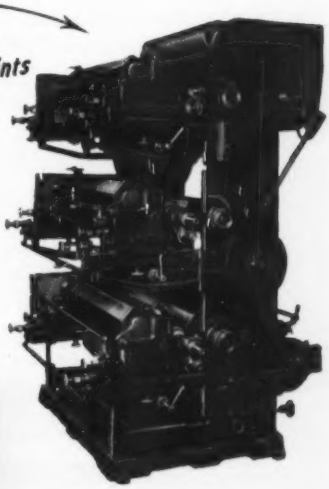

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the tool it needs to persuade dealers all over the country that they can sell more notions by selling Traum.

CREDITS: *Paper envelopes for Irontex mending fabric and sew-in pockets, die-cut cards for seam spreaders and cards for sock patches, New York Printing Co., 270 Lafayette St., New York. Window envelopes for denim and corduroy patches, Tension Envelope Corp., 522 Fifth Ave., New York. Polyethylene heat-sealed envelopes, Comet Envelope & Paper Co., 5 E. 17th St., New York. Cordonnet thread cards and name-tape folders, Meerow Press, 316 E. 23rd St., New York. Pen and name-tape packages, Imperial Paper Box Corp., 252 Newport St., Brooklyn.*

Compartment cookies

(*This article continued from page* 95)

rying the cookies. The company also has plans to develop gift sales to business groups and individuals.

The present careful hand-filling methods now in use by Kornreich Klein have been taxed to capacity. Further expansion is dependent upon mechanization, but the development of a machine to load and seal the cellophane strips is proving to be a difficult job. The cookies, fragile in themselves and of various shapes and dimensions, many of them with hand-applied decorations, cannot be hoppered. The fact that two of some of the smaller cookies are placed in the same "compartment" for a total of approximately 135 cookies in 96 spaces also complicates a mechanical set-up. A machine for this purpose must not only respect the fragility of the cookies, but must provide accurate cut-off length of the cellophane strip and accurate, uniform placement of the between-cookie seals to match the slot placement. One machine has already disappointed the bakery after performing successfully in trial runs. The company, however, is not giving up its effort to develop a machine that can eventually perform this operation efficiently.

CREDITS: *Package design, Milwaukee Industrial Designers, 744 N. Fourth St., Milwaukee, Wis. Paperboard divider rack, P. J. Kansteiner Co., 1640 W. Silver Spring Drive, Milwaukee 9, Wis. Fabricated cellophane strips, Sylvania Div., American Viscose Corp., 1617 Pennsylvania Blvd., Philadelphia. Set-up boxes, C. D. Baird Co., 2100 W. Pierce St. Milwaukee 46, Wis. Corrugated shipping containers, Downing Box Co., 3832 N. Third St., Milwaukee 12, Wis.*

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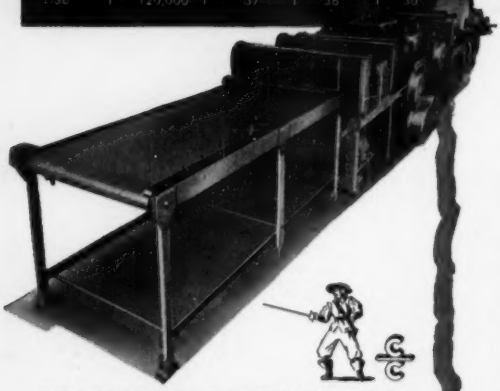

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G-E lamp bulbs

(*This article continued from page* 102) bringing purchase impulse and package-product identification in contact with each other in the outlet where customer and product meet.

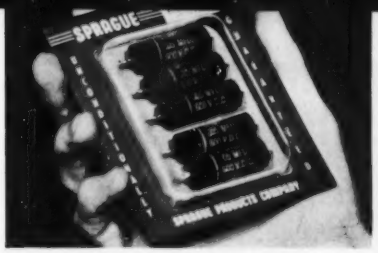
Consistent programming of exhibits at selected trade shows, blanket distribution of lamp-merchandising displays in many types of retail outlets and, of course, the permanent research and consumer education facilities at Nela Park round out the program that has helped packaging promote Edison's invention of the electric lamp to its present status as one of the most beneficial discoveries of all times.

CREDITS: ***Corrugated paper sleeves** for incandescent and fluorescent lamps—Hankins Container Co., 3044 W. 106th St., Cleveland 11, Ohio. **Shipping containers**—Brown Container Co., Inc., P. O. Box 3307, W. Monroe, La.; Container Corp. of America, 38 S. Dearborn St., Chicago 3, Ill.; Fibreboard Products, Inc., 1789 Montgomery St., San Francisco, Calif.; Fort Wayne Corrugated Paper Co., 130 E. Douglas St., Fort Wayne 1, Ind.; Gaylord Container Corp., 111 N. 4th St., St. Louis 2, Mo.; Great Southern Box Co., Inc., P. O. Box 324, New Orleans 9, La.; The Hankins Container Co.; Inland Container Corp., 700 W. Morris St., Indianapolis 6, Ind.; International Paper Co., 220 E. 42nd St., New York 17; The Mengel Co.; 1111 Zane St., Louisville 1, Ky.; National Container Corp., 500 Fifth Ave., New York 36; Ohio Boxboard Co., Rittman, Ohio; Superior Paper Products Co., Mt. Wolf, Pa.; Valley Containers, Inc., Youngstown, Ohio. **Gummed paper tape**—Adhesive Products, Inc., Albany, Calif.; Hudson Pulp & Paper Corp., 505 Park Ave., New York; Thomas Stationery Mfg. Co., Springfield, Ohio. **Case sealers**—Standard-Knapp, Div. of Emhart Mfg. Co., 127 Main St., Portland, Conn.*

Fruit by mail

(*This article continued from page* 119) gift shippers advertise in quality and home magazines, but they agree that they do so only to bolster their mailing lists. Some who want merely to maintain present levels have given up publication advertising almost entirely.

The gift fruit-by-mail business is not, however, invariably profitable. In recent years many companies have dropped out and those which continue agree that big volume is necessary to make it really pay. The principal

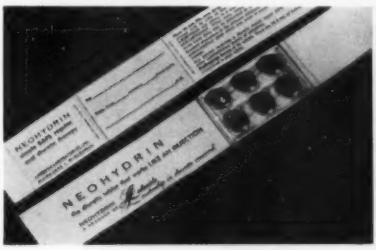


Plastic Domes—We make the dome, you make the rest. Protection and visibility, maximum economy. Excellent for industrial or fancy packaging. Sprague Products Corp., North Adams, Mass.

Full Dress for Collapsible Tube—Plastic cover secures tube in position over multicolor printed detail card. Tube is easily accessible. Hoffmann-LaRoche, Inc., Nutley, N.J.

Multi-Use Detail Card with Slide Cover Sampler—Doctor reads detailing, detaches wings. Label under transparent cover has space for dosage data. Lakeside Laboratories, Inc., Milwaukee, Wisc.

Dispensing Sampler—Sealed end contains identified samples of each potency. Tablets dispense singly from either side of center when cover slides back slightly. Wyeth, Incorporated, Phila., Pa.



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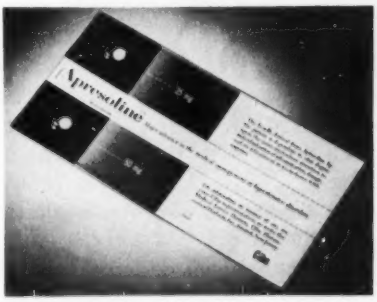
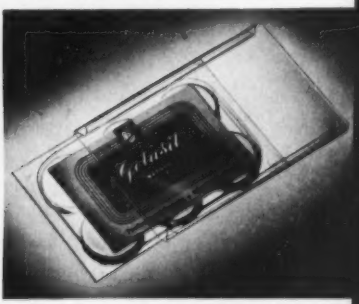
Items with distinct novelty appeal and genuine utility . . . automatically drawn, formed and fabricated, with rotogravure printing if required. Unique packages designed to meet special sales problems. It will pay you to check our prices. Plastic Artisans, Inc., 70 Westchester Ave., White Plains, N. Y.

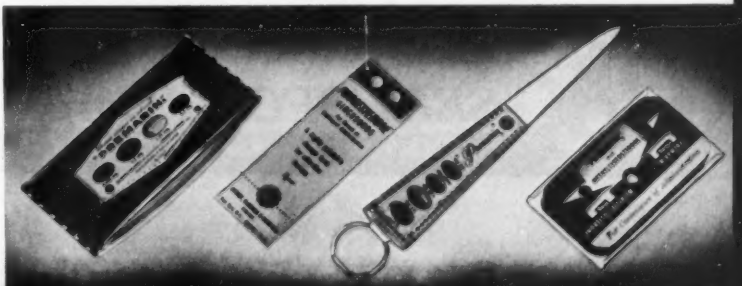




Practical Novelty—Printed blotter with plastic cover which holds small items in domes over printed background. Tablets slide back and forth in domes. Ciba Pharmaceutical Products, Inc., Summit, N. J.

Six Tablet Sampler—Continues as an outstanding example of promotional sampling. Increasing success each year. Printed paper label under cover. Warner-Hudnut, Inc., New York, N. Y.

Useful Novelties—Items with proven reminder value. Blotters, bookmarks, letter openers and desk novelties from formed and molded components, ingeniously feature complete lines of products. Ayerst, McKenna & Harrison, Ltd., New York, N. Y.



Keep Food Products

CLEAN and DRY

with...

SEAL-SPOUTS*

They're ALUMINUM!

—the aluminum pouring spouts for better packaging of free-flowing products.

Your package is designed to do a great job of protection up to the point of opening for use. What then?

Dampness, dust, infestation can enter through torn tops. For full protection until the package is empty add SEAL-SPOUTS. They also guard against spillage. **CUSTOMERS PREFER PACKAGES WITH SPOUTS.**

SEAL-SPOUT Packages are—

EASY TO OPEN AND POUR

EASY TO CLOSE AND STORE

—and SEAL-SPOUTS can be applied right in your production line.

*T. M. Reg. U. S. Pat. Off.

SEAL SPOUT Corp. 1934

363 Jelliff Ave., Newark 8, N. J.

factor in declining profits is the tripling of Railway Express rates in the past six years. In the 1930s, when most present companies went into the business, the minimum express rate for sending a package from California to New York was 35 cents. Today it is $1.50, plus 5 cents tax. Parcel post cannot be used beyond nearby points, for fresh fruit must be shipped in refrigerated cars, and more than two thirds of all orders are addressed to points east of the Mississippi River. Big-volume shippers have a partial solution. They can ship full carloads to central points like Chicago and New York City, then forward to nearby destinations by parcel post. For most gift shippers, however, no solution at all presents itself. One packer which had been shipping 100,000 packages a year withdrew from the business at the end of 1951. "Express rates were too high, parcel-post service too poor and we didn't have enough volume for carload shipment," he explained.

As the small companies drop out, they sell their mailing lists and sometimes contracts for their top orchard output to the larger ones and unless shipping conditions change, the business appears to be headed toward still higher concentration. Among the increasingly large companies rivalry is keen and competition is visible in production of both mailing pieces and packages. Each autumn there is a scramble among company executives to get copies of each others' catalogues and each winter they rack their brains for more attractive and more ingenious package designs. It seems probable that the public may look forward to more elaborately embellished packages and a wider variety of novelties in the years ahead.

CREDITS: *(Principal container suppliers)—Corrugated fibreboard boxes:* ***Crater Lake Orchards,*** *Schmidt Lithograph Co., Second & Bryant Sts., San Francisco.* ***Day & Young,*** *Schmidt Lithograph Co.* ***Harry & David, Bear Creek Orchards,*** *Gaylord Container Corp., 111 N. Fourth St., St. Louis 2, Mo.* ***Mission Pak,*** *Gaylord and Angelus Paper Box Co., 6001 S. Eastern, Los Angeles.* ***Myron Foster's Hesperian Orchards, Inc.,*** *Schmidt Lithograph Co.; Fibreboard Products, Inc., 1789 Montgomery St., San Francisco.* ***Pinnacle Orchards,*** *Container Corp. of America, 38 S. Dearborn St., Chicago 3, Ill.* ***Sweetbrier Orchards,*** *Schmidt Lithograph Co. Wooden boxes:* ***Snow Mountain Orchard,*** *Harris Pine Mills, Pendleton, Ore.*

shoppers won't play around with soiled toys . . .

keep 'em neat, clean, more sanitary with

VISQUEEN *

Put an end to soilage losses—soilage caused by handling, fingering and package breakage. Put your toys in VISQUEEN and they'll remain spotlessly clean and neat and sales-appealing—even under the toughest conditions or the roughest adult or child handling.

VISQUEEN is flexible and durable, doesn't break apart or split or crack, is hard to tear or puncture. VISQUEEN is non-aging, doesn't get brittle or dry out under display lights.

Just as important, VISQUEEN film packaging looks rich and warm—feels smooth and soft; lends an air of added quality to any merchandise. Makes any product outstanding among competition.

Better see a VISQUEEN converter. He can give you the packaging you need—the protection your product needs—and at remarkably low cost.

IMPORTANT! VISQUEEN film is all polyethylene, but not all polyethylene is VISQUEEN. VISQUEEN is the only film produced by process of U. S. Patent No. 2461975. Only VISQUEEN has the benefit of research and technical experience of The Visking Corporation, pioneers in the development of pure polyethylene film.

VisQueen* film...a product of the **VISKING** corporation

World's largest producers of polyethylene sheeting and tubing

Plastics Division, Terre Haute, Indiana

In Canada: Visking Limited, Lindsay, Ontario

*T.M. The Visking Corporation

THE VISKING CORPORATION, BOX H1-1410
Plastics Division, Terre Haute, Indiana

Please send names of VISQUEEN converters in my area.

Name.....

Company.....

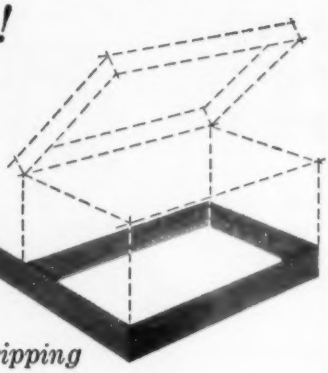
Address.....

City.....

Zone... State.....

REEVES specializes in tapes

to solve your box-binding problems!



- *For Glue Stripping Machines*
- *Holland Finished Cloths*
- *Dry Gummed Tapes*
- *Thermo-Plastic Tapes*

Reeves tapes combine extra-strength with thinness . . . are specially finished to prevent glue seepage and color change. They're made by experts who know your problems and how to solve them. Each lot is tested on Reeves own stripping machine to insure you of smooth, trouble-free production. If you are hampered in production by tapes that don't perform right—call on Reeves.

For further information and a special sample kit of Reeves Box Tapes, write us on your company letterhead.

REEVES BROTHERS INC., W. Harris Thurston Division
54 Worth Street, New York 13, N. Y.

Review and preview

(*This article continued from page* 89)
produce industry in the trend toward corrugated rather than wood for shipping containers. Millions of pounds of citrus fruits will be shipped from California this year in half-case-size corrugated boxes treated with diphenyl to retard mold. Lettuce growers are turning to the use of corrugated containers which, with a new system of vacuum pre-cooling, are said to deliver a better product to Eastern markets.

Machinery

Along with the development of bigger, better and faster models of practically all standard types of filling, capping, wrapping and labeling machinery, the most noticeable trend in packaging machinery is toward new types of unit-packaging equipment, ranging from tiny table-top machines for strip packaging up to complete package-making, filling and sealing machines capable of handling 1- to 2-lb. quantities of dried fruits.

Strip packaging (the sealing of measured quantities or numbers of product in compartments of a continuous strip of flexible material, whether cut off as individual envelopes or left as a strip) used to be considered of interest primarily to the pharmaceutical industry. Now it is being used in dozens of different industries—wherever it is desirable to provide a small, sealed unit of product. Sometimes this is done to provide better moisture protection for the product; sometimes merely to establish an accurate and convenient unit of use. For example, the exact number of nuts and bolts required to assemble a piece of machinery may be sealed in a unit packet and attached to the machine at the factory. Several of the newer machines in this category will print the package as well as make, fill and seal it.

Few if any developments in packaging occur that do not in some way involve and depend on packaging machinery. The heat-sealed carton mentioned earlier would hold little promise if it were not for the forming, filling and sealing machinery developed to make volume output practical.

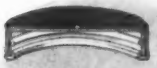
A fully automatic machine for applying cellulose closure seals to bottles, in operation for over a year now at the Fleischmann Distilling Corp., appears to be the first of its kind which a user has termed fully successful. Availability of this type of machinery

"No wonder my cream keeps so *Soft* and *Fresh!*"

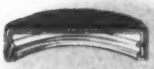
Yes, it's MeritSEAL'd ...and that means POSITIVE PROTECTION, Miss!

The women who buy products capped with MeritSEAL love it—for its smooth, trim lines . . . smart, glistening colors . . . and its distinctive look and feel of luxury. MeritSEAL's safe, efficient seal keeps their cosmetics fresh and moist as new. Everyone who knows MeritSEAL agrees. Cosmetic manufacturers know how it compliments and enhances their product. Production men know it can be depended on for trouble-free performance on the production line. Behind-the-counter saleswomen praise the eye-catching displays—and the fast sales—they can make with products using MeritSEAL. See for yourself how really attractive and efficient MeritSEAL is. We'll be glad to send full information and samples. Simply state your color preference and sizes needed for your product.

HARD, SCRATCH-RESISTANT COATINGS. Bright, sparkling colors for instant sales appeal. Handsomely lacquered or lithographed to suit your requirements.



PATENTED THREAD DESIGN. Spins on freely. Forms a perfect-fitting seal, but won't "freeze" to container. Only MeritSEAL has this exclusive design.



SIMPLE, EFFICIENT CONSTRUCTION. Liner and thread are inserted into a sheet metal shell. The thread holds the liner in position, and the lower edge of the shell locks the thread in place.

RANGE OF SIZE, CHOICE OF COLORS AND LINER MATERIALS. 12 standard sizes ranging from 48 mm. to 100 mm. Special sizes can be ordered. Choice of various liners to suit your needs.

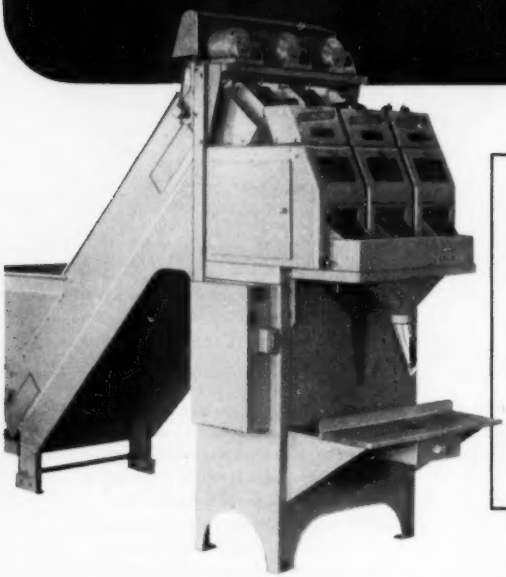
CROWN CORK SPECIALTY CORP.
Division of Crown Cork & Seal Company

CROWN MeritSEAL—

Main Office: St. Louis, Mo. • Chicago: 401 W. Ontario Street
New York: 60 East Forty-Second Street • Western Representative: Western Crown Cork & Seal Corporation . . . San Francisco . . . Los Angeles

Accuracy!

it's GUARANTEED with newly improved Elec-Tri-Pak Fillers



If you package

- Beans, peas, rice
- Macaroni, noodles
- Coffee, tea
- Candy, confections
- Cookies, crackers
- Potato chips, pretzels
- Sugar, salt
- Feeds, seeds
- Fertilizers, chemicals
- Soaps, detergents

. . . there's an efficient Elec-Tri-Pak for you!

Reduces product and packaging costs

When you fill *accurately* you package profitably. You have no costly underweight or overweight problems . . . no short-fill or product give-away worries. You reduce costly, troublesome stop-and-start operations.

Triangle guarantees not only filling *accuracy* but also *speed*. New Mono-matic scale weighs as close as 1/64 oz. Controlled balance beam keeps scale steady. Vibralectric feed control assures even, gentle product flow. That means operating efficiency to meet your exact requirements—with lower labor costs too.

All these features are yours only with Triangle Elec-Tri-Paks. Get the facts for your operation soon.

TRIANGLE PACKAGE MACHINERY CO.

6640 West Diversey Blvd., Chicago 35, Ill.

SALES OFFICES: New York, Newark, Baltimore, Boston, Atlanta, Dallas, Denver, Los Angeles, Portland, Ore., Montreal, Mexico City

should greatly increase the use of these tamperproof seals for many other products *(June, 1952, p. 186)*.

A report covering all the machinery developments of 1952 would be quite lengthy. However, there have been some items of equipment—i.e., a frozen-food package wrapper with speed of 150 or more units a minute; a large-package baked goods wrapping machine—that have more-than-average significance because they have broad implications in large package-using industries.

Of special interest last year was the application of Teflon coatings *(April, 1952, p. 116)* to the jaws of heat sealers and other machine parts where glue build-up may occur. Teflon coatings are also used on conveying and filling equipment for powdered or sticky products. The non-stick properties of Teflon, plus the introduction of techniques for coating it directly onto machine parts, give promise that extra performance can be obtained on lines now subject to a certain amount of down time because of jam-up or the need for cleaning to remove foreign material that interferes with precision operation.

Military packaging

In this period of continued defense build-up, military packaging is very big. It has been estimated that 6% of the total military-supply budget is spent for packaging and preservation. The stretch-out in procurement means that military packaging will continue to involve billion-dollar figures and be an important factor in the total packaging picture in 1953.

Last year, military and commercial packaging lived quite comfortably side by side. This condition can be expected to continue, barring a sudden jolt in the rate of military procurement.

Attention has been called to the changing concept in military packaging, with emphasis now being placed on packing for indefinite long-term storage *(Sept., 1952, p. 128)*. Much of today's production goes to warehouses instead of firing lines. Moreover, quantities are relatively small and this in some instances has discouraged the designing of truly adequate packages. The problems involved in packaging for long-term storage are enormous and the challenge to produce realistic protection and yet observe economy in cost, bulk, weight and handling is bringing on many new developments.

IMPORTANT ANNOUNCEMENT

to companies now planning for bigger sales to the packaging field

The April issue of Modern Packaging will be the annual Show* number.

It will reach the largest audience in twenty-six years.

It will give advertisers **more** value than any other issue in '53.

Wire or write for details and rates to

Advertising Department,
Modern Packaging,
575 Madison Avenue,
New York 22, N. Y.

22nd National Packaging Exposition, Chicago, April 20—23, 1953

How DuPont helps you solve

Cellophane:
Problem: to give potato chips sparkling display . . . extra-moistureproof protection for freshness . . . good durability. Answer: Double-wall bags of Du Pont MST Cellophane.
CRISP
Fresh
POTATO
CHIPS
Polyethylene Film:
Selected
APPLES
Problem: Heavy produce items like apples need a film with extra strength and flexibility . . . plus easy loading and closing. Answer: bags made of Du Pont Polyethylene Film.
Acetate:
Problem: to give high-luster display to packages of handkerchiefs . . . and to maintain the quality appearance of the product by insuring dimensional stability of the film. Answer: Du Pont Acetate Film.

your packaging problem

Complete packaging service works with you to get the right film . . . best package construction . . . modern shopper appeal

Whatever the needs of your product, Du Pont's experienced packaging specialists will help you choose the *right* film. Du Pont offers you 115 varieties of three basic films—Cellophane, Polyethylene and Acetate. You can get a film that's completely moistureproof, or one that permits graduated moisture loss. One that's dimensionally stable, or conformable to irregular objects. A film that stays tough and flexible at low temperatures, or one that provides brilliant luster.

You'll get help, too, with every question of package construction. Du Pont's recommendations are backed up by 25 years of experience and continuing research on more efficient use of packaging films.

And to make sure your package is in line with today's shopping trends, you have the opportunity to review Du Pont's up-to-date surveys of consumer buying habits. Get in touch with your Du Pont representative. He'll be glad to help you. For information on bags and printed materials get in touch with your converter of Du Pont films—E. I. du Pont de Nemours & Co. (Inc.), Film Department, Wilmington 98, Delaware.

Only Du Pont gives you all these packaging aids:

1. **WIDE VARIETY OF PACKAGING FILMS** scientifically tailored to meet the needs of varied products and packages.
2. **TECHNICAL** assistance to help you plan the most practical and efficient construction of your package.
3. **MERCHANDISING** help through continuing nationwide surveys of buying habits, to keep your package up to date.
4. **NATIONAL ADVERTISING** to continually strengthen consumer preference for your packaged products.

DU PONT
PACKAGING FILMS
CELLOPHANE
POLYETHYLENE • ACETATE

DU PONT
REG. U. S. PAT. OFF.

Better Things for Better Living
. . . through Chemistry

Sterling Supreme Gummed Tape

PEOPLE MAKE THE BIG DIFFERENCE . . .
Here's our plant superintendent, who has had 20 years experience with The Gummed Products Company. It is men like him, with a practical knowledge of their job and an intense loyalty to their company, who make Sterling Supreme Gummed Tape stand out above all others today.

Quality Controlled

. . . in all departments

Money can buy machinery, but it takes more than money to establish and maintain high standards. Both management and men must have "know-how," the will, and the pride in their profession—that "extra something" that builds reputations.

39 years of continuing research in all departments of The Gummed Products Company—39 years devoted exclusively to the manufacture of gummed products—have culminated in our super-standard—Sterling Supreme Gummed Tape.

Sterling Supreme Gummed Tape is made to perform a service—is never made to meet a price.

Be safe—insist on genuine Sterling Supreme Tape the next time you order sealing tape.

Your nearby paper merchant who handles Sterling Supreme, is your reliable source for all top-quality paper products.

GUMMED PRODUCTS COMPANY

Report on fibre boxes

The results of three years' investigation into the causes of damage to goods shipped by rail in fibre boxes have been published in an 88-page final report by the Transportation & Packing Survey, 1415 K St., N. W., Washington, D. C. The survey is an activity sponsored jointly by the U. S. railroads and the Fibre Box Assn. In a three year period the survey inspected 3,440 carloads of products from over 1,000 different manufacturers. These inspections showed that less than 10% of the cars had sustained over 60% of the damage. The report suggests that by setting up a new bureau which could locate and work with companies whose products suffer excessive damage during rail shipment, the railroads could reduce their loss and damage payments from the present 100-million-dollar-a-year. This bureau would advise and assist shippers with the highest claim records where the greatest reduction in loss and damage claims can be made.

Ink rub tests

(*This article continued from page* 132)
of surface abrasion on the blotting paper.

(*e*) *Functional rub* is a term embracing a number of miscellaneous uses for the Sutherland Rub Tester. An ink which is acceptable under the outlined test procedures may fail under exposure to foreign liquids or pastes. For example, certain inks might be tested to conform to specifications such as "one rub, cod liver oil" or "three rubs, Jones Antacid tooth paste."

In reporting functional rubs, the operator must specify the number of rubs, the time of contact before rubbing and the special conditions and testing mediums employed.

Evaluation of tests

A practical approach should be emphasized in test evaluation. Few, if any, inks will pass rubbing, wet or dry, without a slight transfer of color. Decisions on the suitability of an ink are best made by running comparative tests, checking an acceptable sample at the same time and under the same conditions.

Consideration must be given to the time interval between printing and testing, particularly with slow-drying inks.

NOBODY

BEATS

CAMEO ON

EMBOSSED

AND PRINTED

LABELS, TAGS

AND SEALS

Beer can prize winners

In a competition sponsored by the Brewers Assn. of America, the three can designs illustrated below won honors for container design from a field which included more than 70 entries. First prize went to the Storz

PHOTO, CONTINENTAL CAN CO.

Brewing Co., Omaha, Neb.; second prize was won by Potosi Brewing Co., Potosi, Wis.; third prize went to Adam Schedit Brewing Co., Norristown, Pa., for its Valley Forge Beer.

The Brewers Assn. of America represents 250 of the smaller, independent brewers from all parts of the United States, as well as a number of brewers from outside our borders. The package-design competition is one of the highlights of the organization's annual convention.

Contest entries, which incidentally are not limited to new or recent designs, were judged by members of the Art Director's Club of Chicago, with William Miller, General Outdoor Advertising Co., as chairman.

Metal can prices

The OPS has issued three supplementary regulations providing a method whereby manufacturers of metal cans may increase their ceiling prices. These are Supplementary regulation #126 to GCPR, Supplementary regulation #39 to CPR-22 (manufacturers' ceiling price regulation) and Supplementary regulation #2 to General Overriding regulation #35 (metal costs pass-through regulation). The first method is a flat 4% increase over the levels of the first half of 1952. The second is a 2.3% increase over the first half of 1952 plus whatever metal cost pass-through can be justified under General Overriding regulation #35.

Chaspec knows how to capture
MAXIMUM ATTENTION
for your products
There's more than one way for a package or display to capture attention. And Chaspec knows all the ways and uses them all. Lots of times we invent new ones, better ones, depending upon the nature of your product. You'll be amazed to know how widely Chaspec packages and displays are used and what good company you'll be in if you use them. For unusual eye-appeal with unusual materials . . .
The Chaspec Manufacturing Company Since 1920. Greenwich, Conn.
Chaspec

CLASSIFIED ADVERTISEMENTS

Modern Packaging reserves the right to accept, reject or censor classified copy.

EMPLOYMENT • BUSINESS OPPORTUNITIES • EQUIPMENT (used or resale only)

MACHINERY FOR SALE

FOR SALE: 1-Type A and 1-Type B Transwrap Machines; 2-Brightwood Box Machines, with collapsers; Std. Knapp Self-Adjusting Gluer Sealer & Comp. Unit; Pneumatic Scale Packaging Line, late type; Pneumatic Scale 4-head Capper; Capem SIF Capper; 7-Vacuum & Gravity Fillers, 8/8 fitted; Stokes & Colton Auto. Tube Fillers & Closers. Only a partial list. Send us your inquiries. Consolidated Products Co. Inc., 16-20 Park Row, N. Y. 38. BArclay 7-0600.

PONY LABELRITE: Factory rebuilt, one year "new machine" guarantee. New Jersey Machine Corporation, 16th Street & Willow Avenue, Hoboken, New Jersey.

OVERSTOCKED—No Reasonable Offer Refused. International S. S. Straightline 160/min. Vacuum Filler. Resina Models S and LC Automatic Cappers. CRCO New Way MH Wraparound Labeler. Stokes and Smith A Transwrap Filler, Capem E4F 4 head Rotary Capper. Island Equipment Styline Bottle Uncrambler. Stokes & Smith G1, G2, G6 and HG88 Auger Powder Fillers, Triangle Elec-Tri-Pak G3C, A6CA Fillers. Filler 4-Head S. S. Filler, Knapp 429 and Ceco Carton Closers. Pony ML and M Labelrites. Pneumatic Scale Auto. Cartoning Lines, 60 and 30 per min. Ceco, Redington and R. A. Jones Automatic Cartoning Units. Package Machinery Co. CA2, DF1, FA and FA4Q Wrappers. Hayssen 3-7 Miller, Scandia Model 88U1 Wrappers. Hudson Sharp Campbell Auto. Cellophane Wrapper. This Is Only a Partial List. Tell Us Your Requirements.

Union Standard Equipment Company
318-322 Lafayette Street
New York 12, N. Y.

CONVOLUTE WINDING MACHINE: ½" diameter to 3" diameter, 27" long—very reasonable price. Contact E. Simon, Universal Tube & Container Co., 144 Moody St., Waltham, 54, Mass.

TWO BARTELT AUTOMATIC PACKAGING MACHINES: Complete with Mateer fillers and electric eye registry equipment. Practically new machines. Any reasonable offer accepted. Smith-McClintock Company, 1739 Harding Road, Northfield, Illinois.

HAYSSEN WRAPPER: Used one year. Terms. **WANTED:** Small sheets in close cuts, etc., acetate .005 or heavier. Shadur Paper Box Co., 5110 No. 35th St., Milwaukee 9, Wisconsin.

MACHINERY WANTED

CAMERON SLITTER: Packaging Line. Labeler, Capper, and Mixer. Box 464, Modern Packaging.

CAPPER, WORLD B-LINE LABELER AND HORIX FILLER: Capacity 40 to 50 one-gallon jugs per minute. Give full particulars as to condition, age, model and price. P. O. Box 5086, Dallas 2, Texas.

MACHINES: For round acetate boxes; cylinder making, beading, forming. Especially interested in Taber—double edge straight beader. Hulbert—4 Section beader. Box 474, Modern Packaging.

MATERIALS WANTED

PLASTIC SCRAP AND REJECTS IN ANY FORM. Cellulose Acetate, Butyrate, Polystyrene, Vinyl Polyethylene, etc. We pay top prices for clear, colored and printed scrap in any quantity. Box 463, Modern Packaging.

PLASTIC SCRAP: Cellulose Acetate and rigid vinyl sheet scrap in any quantity. Also Polystyrene, Acetate, Butyrate molded rejects, scraps and excess molding powder inventories. Box 468, Modern Packaging.

SITUATIONS WANTED

VETERAN: single, college graduate wants position as estimator, scheduling clerk or production control man. Now has two and one-half years experience. Will travel if necessary. Presently employed as assistant to Production Mgr. of small plant. Box 471, Modern Packaging.

HELP WANTED

SALESMEN: We are converters and printers of cellophane, polyethylene, glassine and foil, in the form of bags, envelopes, rolls and sheets. No objection to carrying side-lines. In reply please state age, past experience, territories covered, etc. All replies kept strictly confidential. Box 465, Modern Packaging.

WANTED: A growing opportunity for the right man—30 to 45 years of age—with combination of estimating and sales experience in packaging field. This is an exceptional opportunity with a middle-sized Eastern concern. Give complete experience and salary expected. Your reply confidential. Box 466, Modern Packaging.

SALESMAN: Progressive converter with modern new factory has openings for several men. No objection to side-line men. We are converters and printers of cellophane, glassine, polyethylene and pliofilm in the form of bags, rolls, and sheets. Our prices are most competitive and quality is top notch. In reply give age, experience, present lines carried, territory covered, etc. Box 467, Modern Packaging.

PACKAGING ENGINEER: Position available with leading food company in the New York City area for a qualified engineer interested in packaging and production. Educational background considered as well as experience. Opportunity for advancement. Salary commensurate with experience and training. All applications will be treated with strict confidence. State full details. Box 469, Modern Packaging.

SALES REPRESENTATIVES: Converter of cellophane, polyethelene, and other transparent bags, envelopes, and tubes offers for the first time to men with a following in the food, candy, textile, toys, and novelty industries. We are seeking top men on commission basis, no objection to side-line men. Unusually fine opportunity with good earnings. All replies held in strictest confidence. Box 470, Modern Packaging.

CHEMIST: An established foil company, located in the Middle West is desirous of hiring a man having experience in the coloring, mounting, and printing of aluminum foil. This is an excellent opportunity for someone to start on the ground floor of this new phase to our business. Box 472, Modern Packaging.

REPRESENTATIVES WANTED: Territories open for pliable plastic containers and caps for fibre, plastic and paper tubes and vials. From capsule size to 3" diameter. If you are now selling tubes and vials to the packaging trade this should be a very interesting and practical addition. Write Falge Engineering Service, 4733 Elm St., Washington 14, D. C.

PACKAGING SALESMAN: With ear to represent manufacturer printed roll cellophane, waxed paper; foil, MG, window, glassine bags, etc. Exclusive New England territory. New England resident desired. Man experienced as paper jobber or paper convertor salesman preferred, however others given consideration. Basic salary plus commission. Write information. Box 473, Modern Packaging.

ADJUSTOR: Operator for bag-making machines in established mid-western plant converting cellophane and polyethylene. Excellent opportunity. Permanent. Reply giving experience, qualifications and salary. Confidential. Box 475, Modern Packaging.

PRESSMAN: Experienced in roll-to-roll printing by aniline, rotogravure and all processes. Excellent opportunity with established midwestern converter of cellophane and other packaging materials. In reply give experience, qualifications and salary. Confidential. Box 476, Modern Packaging.

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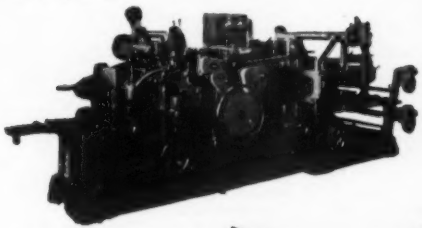
60 years of dependable service

Model III-S produces single or duplex cellophane bags at high speeds. POTDEVIN patented compensator and "electric eye" controls register of pre-printed cellophane.



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Your products will prove more appealing in our transparent plastic containers.

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MANUFACTURERS
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Modern packaging

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575 Madison Avenue, New York 22, N.Y.

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pliofilm
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cellophane
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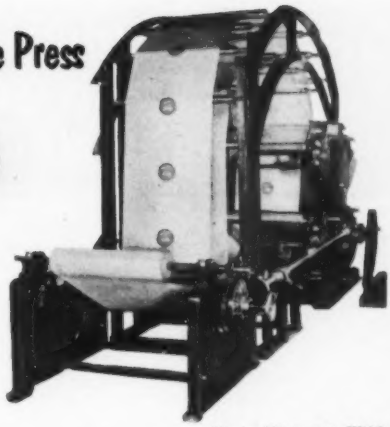
World's Finest Flexographic-Aniline Press

WOLVERINE HYDRO-PRINTER

MODEL X-120



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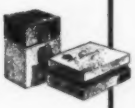

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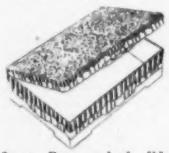

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#30 — 3¼" x 2¼" x ¾", hinged

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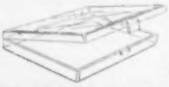

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ACETATE WRAPPERS • ACETATE-FOIL WRAPPERS • DUROFOIL® WRAPPERS

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